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THE WONDERFUL COTTON RECORD.

AS the close of the present commercial cotton year draws nearer, the record of the cotton crop grown in 1914 becomes more and more notable. It was the largest crop ever grown; so large that, in view of more or less dullness in two or three of the countries of Europe which are usually the largest foreign purchasers of the staple, a fall in price of perhaps two cents a pound might have been expected, even with general conditions in Europe remaining normal. The outbreak of war at the beginning of the new season brought demoralization to the cotton market, and the interference with the movement of the staple to foreign ports was so influential in prolonging the demoralization that the experts of the National Department of Agriculture, estimating upon the farm price of 6.8 cents a pound as of December 1, valued on December 31, 1914, the crop at \$519,616,000, or \$305,779,000 less than the value of the 1913 crop. This estimate, it was announced, was subject to revision this month. What that revision will show is an interesting matter. Up to December 31 only 7,835,861 bales of cotton had been brought into sight in the first five months of the present season, less than one-half of the crop, compared with nearly 70 per cent. of the 1913 crop brought into sight in the same period in the preceding season. The exports in the five months were 2,478,683 bales, or 2,844,834 bales less than in the like period in the preceding season, and the takings in the five months by American spinners were 600,423 bales less. Just about that time recovery in the price began, and within the first four months of 1915 increased by from 2½ to 3 cents a pound, or \$12.50 to \$15 a bale. This rise in price was accompanied by an acceleration of the movement of the crop into the market, the first four months of 1915 bringing 6,352,400 bales into sight, increasing the exports by 4,706,282 bales to 7,184,965 bales, or only 1,022,191 bales less than the exports in the first nine months of the preceding season, and increasing the takings by American spinners by 2,408,823 bales to 5,215,970 bales, or only 100,071 bales less than like takings in the same period of the preceding season. In twelve months of the commercial year 1913-14 the takings by American mills were 5,550,930 bales. Such takings in nine months of the 1914-15 season are only 334,960 bales less than those in the twelve-month season.

These manifestations viewed against the background of the demoralization of nine months ago are remarkable. They reflect a widespread holding movement of the crop by Southern cotton growers, temporarily detrimental in its sentimental effect upon the South, perhaps, but it is believed likely to prove of advantage in the ultimate outcome by increasing largely the aggregate amount of money obtained for the crop. They also suggest that quite

a large quantity of the cotton going to other countries has landed in plants making explosives rather than in cotton mills. For instance, Great Britain is the only large European country that shows an increase—and that 87,481 bales—in the amount of cotton taken in the nine months of the present season compared with the same period last season. Again, in the twelve months of 1913-14 the total takings by mills in America outside the South, such mills including those of Canada, were 2,513,621 bales, while their takings in the past nine months were 7352 bales more. The portion of the staple generally used in the manufacture of explosives are in the form of the minute linters taken from the seed in preparation of the latter for crushing. Experts claim that this year's supply of linters has been by no means adequate, and that, therefore, resort has been to the more costly staple, accounting in part for the betterment in the general market price.

Whatever the reasons for the betterment, it should not be impaired in the last few months of the season by overplanting, for such a thing is still possible, and provision for its maintenance should be made by organizing, in co-operation of growers, buyers and bankers, a reasonable system for handling the coming crop.

RAILROADS IN AMERICAN PROGRESS.

BECAUSE the fact is so obvious, many persons forget the importance of the railroads in the economy of this country. Conveniences of modern transportation are so taken for granted that few of us ever try to imagine what the country would be without its railroads. But it may not be unprofitable to give thought to that. For the railroads, in opening up vast agricultural regions, in tapping mines and forests and in facilitating the distribution of wares representing the output of the three great sources of raw material, have been an essential factor in bringing the United States to its present stage of prosperity. In 1880, just about the time when the latter-day material development began to get underway, the railroads had an aggregate length

Production:	1880.	1890.	1900.	1910.	1914.
Agricultural	\$3,352,541,000	\$3,860,107,000	\$4,717,070,000	\$8,511,395,000	\$9,872,936,000
Mineral	\$364,928,000	\$606,476,000	\$1,107,031,000	\$1,992,431,000	\$2,200,000,000
Forests	\$388,781,000	\$743,391,000	\$944,718,000	\$1,250,000,000	\$1,200,000,000
Manufacturing	\$5,369,579,000	\$9,372,379,000	\$13,010,036,000	\$24,237,000,000	\$27,000,000,000
Railroad mileage.....	93,262	156,404	184,648	240,831	252,000
Estimated true wealth..	\$43,642,000,000	\$65,037,091,000	\$88,577,307,000	\$125,000,000,000	\$137,000,000,000
Population	50,156,000	62,948,000	75,995,000	92,175,000	98,781,000

of 93,262 miles, serving a population of 50,156,000. The value of the products of agriculture in that year, including the estimated value of animals sold or slaughtered on the farm, was \$3,352,541,000, of the products of mines \$364,928,000, and of the products of the forests \$388,781,000. The distance that the country has traveled in production since 1880 is clearly apparent in the fact that the South of today, embracing less than 30 per cent. of the total area of the country and having a population 16,000,000 less than that of the United States in 1880, has 93,595 miles of railway, its annual agricultural production has reached a value of \$3,600,000,000, its mineral output \$472,000,000, and its forest products \$700,000,000. In the accompanying table are presented the figures comparing the main lines of production in the United States by decades since 1880 with the estimated figures for 1914.

With an increase between 1880 and 1914 of population from 50,156,000 to 98,781,000, or at the rate of 96.9 per cent., production has increased from \$3,352,541,000 to \$9,872,936,000, or 194.5 per cent., in agriculture; from \$364,928,000 to \$2,200,000,000, or 502.8 per cent., in mining; from \$388,781,000 to \$1,

200,000,000, or 208.7 per cent., in forestry, and from \$5,369,579,000 to \$27,000,000,000, or at the rate of 402.8 per cent., in manufacturing, while the estimated true wealth of the country has increased at the rate of 213.9 per cent. These increases have come about with an increase in railroad mileage of 158,738 miles, or at the rate of 170.2 per cent. But railroad construction was undoubtedly influential in giving the spurt to production. In the ten years between 1880 and 1890 the country built an average of 6314 miles of railroad a year, the greatest average in any decade. Between 1890 and 1900 there was a decided retardation in railroad building, accompanying the general depression in some of the years, and an average building of only 2824 miles a year. Between 1900 and 1904, however, the yearly average rose to 6899 miles, fell to 4764 miles in 1904-1910, and between 1900 and 1914 reached 2792 miles, a lower average than in the depressed years of 1890-1900.

It is not possible or necessary to trace closely in the accompanying statistics the connection between railroad construction and the development of material production. It is significant, though, that while for every mile of railroad there was production to the value of \$101,600 in 1880, in 1914 the average was \$159,813. This will indicate that more is now put upon the railways in the matter of distributing product than was the case thirty-odd years ago, a task which has called for larger engines and better cars, even if it has not always been possible to tap new sources of freight by building roadbed.

That task were pastime compared with the task of combating influences in State and nation, hampering the railroads in their efforts to keep pace with the transportation demands of the country. On the one hand, they have been obliged to increase their expenditures in higher wages and in greater cost of equipment and materials, and, on the other hand, they have been forced to make lower traffic rates, while agitations of various kinds have tended to make the investing public reluctant to venture their money upon railroads. The acute stage in this situation has passed, it is believed; there is an inclination to do justice to the railroads so as to permit

them to earn enough money to meet their expenses, and a study of the close connection between American progress and the railroads ought to bring about a better understanding between the people and the railroads.

IN THE BREEZE OF REVIVING ACTIVITIES.

RAILROADS operating in the Southeast are naturally interested in the statement by General Manager B. J. Christman of the Georgia Fruit Exchange that the Georgia peach crop this year will be between 4500 and 5000 carloads. That means quite a large sum of money to be put in circulation by way of the peach growers and considerable business for the transportation companies in giving wide distribution to the fruit in other parts of the country.

Railroads in the upper portion of the South may expect additional business from the expansion of activities in the coal fields of West Virginia and Kentucky and from the movement of pig-iron from

the Birmingham district, where the aggregate April sales as reported were within 53,000 tons of the average monthly output in the whole South in the year of the greatest annual production of pig-iron in that section.

A paper mill now in its third year in Southern Mississippi which uses refuse of the lumber industry for material is operating twenty-four hours a day, and is using at present second-growth pine in the absence of a sufficient supply of its usual material consequent upon slackness in the local lumber industry, but here and there are indications of a resumption of activity in that line, the announcement of the reopening of the Massee-Felton Lumber Co.'s plant at Macon, Ga., being supplemented by announcement that the Central of Georgia Railway shops in that city will go upon full time.

In one day last week eight vessels left for Latin-American ports with cargoes including 1,815,108 gallons of petroleum, 23,000 bales of cotton, 200,000 bushels of wheat, and lumber, staves, crossties, food products and building material.

These conditions, together with projects in different parts of the South for improved highways, school buildings and other public buildings, are straws in the breeze of returning construction and other activities in that section recorded, also in better financial conditions generally.

ADVERTISING IN SOUTHERN NEWS-PAPERS.

ONE of the immediate results of the panicky state of mind induced by the cotton situation in the South eight months ago was the loss by a number of Southern daily newspapers of advertising patronage. Regardless of who was responsible for it, it is a fact that the abuse by politicians and other limelighters of the "buy-a-bale" movement created in other parts of the country, and in the South itself, a deep-seated impression that the South would lose at least \$400,000,000 on its cotton crop, and in losing that would be poverty-stricken. Men assuming to be representative of the South, but who were really representative of nothing but their own instincts to gain a bit of temporary notoriety, overworked the situation to the point where appeals were made to buy cotton at an arbitrarily fixed price upon the plea that it would help the South. The agitation in its extremes overlooked the fact that in the preceding five years the South had received \$4,599,500,000 for its cotton and cottonseed; that the \$1,043,000,000 value of its 1913 crop, the greatest value in any one year, was less than 30 per cent. of the \$3,630,000,000 value of all the agricultural production of the South in that year and less than 13 per cent. of the total value of all Southern production, and that, even had there been a difference of \$400,000,000 between the value of the 1914 cotton crop and that of the preceding year, that \$400,000,000 would not have meant an actual loss to the cotton growers as a whole, their real loss being the difference between the cost of making the crop and what they received for it.

The "buy-a-bale" movement where it was properly followed did have the effect of bringing about a holding of cotton by which thousands of growers avoided sacrificing their cotton at the prices that prevailed until the first of this year. Nevertheless, the extravagances in the movement wrought an injury upon the South which was reflected in the withdrawal of advertisements from the daily newspapers. Believing that the South was poverty-stricken, it was natural for the advertisers to feel that it was useless for them to attempt to sell anything in that section. But the South was not poverty-stricken, and even had the spending power of the people of that section been reduced to the extent expected because of the slump in cotton, the wise advertiser, knowing the potentialities of the South and its demonstrated ability to recuperate quickly, and looking into the long future rather than to the immediate present, would have maintained his advertisement in the daily newspapers, if, indeed, he had not increased it.

It is never too late to correct a mistake. The arguments that should have prevented a withdrawal of advertisements from Southern daily newspapers

eight months ago apply today for the return of such advertisements and with even greater force. For events have shown that the South is not poverty-stricken, that panic was unjustified, and that even though there was a temporary slackening in buying, it was only temporary. Revival began when local advertisers joined heartily in taking advertising space in the "build-now" movements in a number of communities. But the main principle to be considered always is that buyers do not trouble themselves to keep in mind the names of persons with whom they wish to trade, and that the surest way to waste money in advertising is to cease to advertise in times of depression. The man that keeps his advertisement in the paper year in and year out, in times of prosperity as well as in times of dullness, is the man that is going to control the trade whenever folks have money to spend.

UTILIZING WOOD WASTES.

ONE of the great economies still to be effected in this country is the commercial utilization of wastes in the various forms of the lumber industry. A beginning in more than one direction has already been made and its success is a guarantee of the great profits to accrue from the full use of such material. Rather a novel undertaking in this connection is a wood-waste exchange conducted by the forest service of the National Department of Agriculture, designed to enable lumbermen and wood-working manufacturers to make use of each other's waste to their mutual advantage and ultimately to save much forest material as well as money. In semi-monthly circulars the exchange publishes the names and locations of factories having waste wood for sale, with detailed information as to species, sizes, forms and quantities, as "opportunities to buy waste" and as "opportunities to sell waste," the specific requirements of wood-using plants. The wood-waste exchange has already more than forty manufacturers listed as having waste woods for sale or as desiring to purchase the same. In illustration of the advantages to be derived the Forest Service says:

One of the first waste problems solved has been that of a furniture-maker in Michigan, who wrote to the forest service asking how to dispose of sugar-maple blocks and sticks which were cut off in the process of furniture making and which he had to sell merely as fuel. Samples were obtained from him, and the forest service then located a scrubbing-brush manufacturer who used small maple blocks for brush backs. The result was that the furniture-maker was enabled to sell his waste at a much higher price than it had brought as firewood, while the brushmaker was enabled to buy brush-back material in suitable sizes at a much lower figure than it had been costing him to buy maple lumber and cut it up.

Developments of this undertaking will be studied with interest. In a number of lumbering lines systematic efforts are made to widen the use of lumber, with the ultimate purpose of making the industry more profitable. But perhaps such advertisement might wisely be supplemented by encouraging the use of the wastes of the industry as a material for other industries. When one recalls the enormous values attained for wastes of the packing-house now called by-products; by cottonseed, once a nuisance; by the by-products of the coking industry and by the conversion of annoying and dangerous fumes from smelters into sulphuric acid, and contemplates the vast amount of wood waste used principally as very costly fuel, and other wastes of the kind not used at all, he may begin to realize the importance of any movement intended to cultivate the economic use of such waste.

THE MOVEMENT IN IRON.

REFERRING to the revival of activity in Southern iron, Matthew Addy Company's market report for May 1 says:

So heavy has been the buying that one of the Southern furnaces has withdrawn from the market. Two of them have made a sharp advance in prices, and no more iron is obtainable at the very low quotations which were in evidence only a month ago. The bulk of the Southern

sales have been made on the basis of \$9.50 for No. 2, and it is very likely that the price will be firm at \$10 shortly.

Iron abroad is now at least \$6.50 higher than in Birmingham. There is a steady export movement, but Americans are unable to take full advantage of what otherwise would be a splendid opportunity to turn an honest penny, because not only are ocean freights excessively high, but vessel-room offering is exceedingly limited. Freight rates that before the war were from 10 to 12 shillings are now from 30 to 50 shillings. So export business is accomplished under difficulties.

It is a fact that the present movement in iron has nothing to do with war orders, for war orders cut comparatively little figure. Where one ton of iron can be traced to war orders, twenty tons can be traced to the domestic needs. This is contrary to the general belief, but it is true.

There seems to be no reason to expect anything but a continued upward movement in the near future. All the indications point that way and all the actual developments are on the right side. Of course, iron is still a pauper, but it is beginning to gain a little of its lost self-respect.

It used to be that the iron market was a fairly accurate barometer of general industrial conditions in this country. But it is a weather saw that all signs fall in dry weather. World-wide conditions are such that the present activity in the iron trade may not be as safe a criterion as usual. But on the whole it may be regarded as one of the signs encouraging American industries to return to their normal occupation.

Probably the most gratifying feature of the present movement in iron is that it is hardly traceable to any great degree to war orders, but is apparently in response to domestic calls. The slackness in demand which had developed months before the outbreak of the war naturally resulted in a shortage of stocks among users of iron, and the present activity may be considered as a reflection of a belief that the domestic needs are to increase from this time on. Matthew Addy Company says that twenty tons of iron can be traced to domestic needs for one that can be traced to war orders. As a matter of fact, one ton of iron called for in domestic use is a much more substantial fact than twenty called for by the war. War orders in their effects upon American industry as a whole may be likened to the use of an artificial stimulant which is really a depressive, while the activity induced by domestic orders in their regular process is as strength given to the body by substantial food. Of course, the great industries which receive large war orders, if at the same time they are assured of full payment for the orders, and some other industries more or less dependent upon them, may be immediately benefited, but the pig-iron that goes into steel rails and steel cars and structural material for use in the United States is far more attractive and beneficial than the pig-iron that goes into shrapnel shells or big guns.

JITNEY BUSES AND KINDRED VEHICLES.

AFTER several months of experience it may be concluded that the jitney bus as a factor in urban and interurban transportation has come to stay. Not that all such vehicles now operating will continue in business; some of them will be eliminated by the force of natural economic laws, but many others will remain. The comparative ease with which anyone can enter the jitney field has induced many persons to go into the business of carrying passengers about town, so that there must follow a process of elimination which will doubtless result in the survival of the fittest—maybe the strongest, financially—until the new form of enterprise has gotten down to a system of operating which can be relied upon as profitable. But that jitneys will persist appears certain to any observer who has investigated and realized that they perform a service of advantage, not wholly in competition with street railways, but in addition to them, and probably in many instances bringing them business which they have never thought of going after by the use of similar means.

Phoenix, Ariz., is credited with being the birthplace of the jitney idea in 1913, when a strike on the street railway occurred. It next appeared at Long Beach, near Los Angeles, Cal., and then in that city itself in October, 1914, since which time it has spread practically all over the United States. In

most cities and towns the jitneys continue to be run without new laws governing street traffic or licenses other than the usual State licenses for all motor vehicles, but that they will be regulated by law sooner or later seems most probable. In large cities they have vastly increased the motor traffic on certain important thoroughfares, and consequently there has been a corresponding increase of danger to pedestrians, as well as to riders. The authorities realize these facts, and will doubtless decide finally upon methods of regulation that will in operation be satisfactory to the public and just to the jitney owners and operators.

In several places street railways are reported to have sustained considerable losses in consequence of the jitney competition. This may be in large measure temporary, some people using the busses because of their novelty, but after a while returning to the use of the railways. It would seem that the opportunity for such losses to happen would be more frequent in places where street cars are operated upon rather long "headway," as the railway language has it, rather where one car follows another after an interval of only four or five minutes at the most. And it is recognized that not a few passengers who might use the jitneys are being held by the street-railway companies because they are responsible operators who can be looked to for recompense in case of accident, whereas thus far not many of the jitney men are so considered. Moreover, it is futile for existing local transportation companies to oppose the introduction of jitney busses excepting upon very strong and unassailable grounds, and it is better for them not to voice any opposition at all. At the most it might be demanded that the jitney owners be required to operate under the same laws that the street cars are run, but there has arisen doubt as to whether that would meet public approval, because the busses do not occupy any part of the street with tracks or trolley poles and wires, although in crowded places their presence undoubtedly adds conspicuously to the overburdening of the air with the odor of burned gasoline, yet as it is no longer fashionable to object to this smell, this point may be overlooked. In a word, if the jitney has intrinsic merits, it will necessarily survive; if it lacks them, it will die.

One street-railway company that attempted to combat the jitneys by court injunction has, it is reported, just ordered 100 motor vehicles to be operated in connection with its electric lines.

But there is another development of the automobile omnibus which is removed from the field of street-railway competition, although it does in a measure compete with steam railroads. This is interurban automobile service, and it is being provided in a number of localities with success to the operators and the public. In this class of work there are large machines capable of holding as many passengers as a fair-sized street car, and still other vehicles for freight service, the latter calling at stores for boxes and packages in the cities and towns, much to the advantage of those who have occasion to employ their facilities.

Evidently we have yet to fully realize the many advantages and uses of the automobile.

Steel Barge for River Trade.

Within the next few days it is expected that Barge No. 1, which is being built by the J. S. Schofield's Sons Company of Macon for the Macon-Atlantic Navigation Co., will be launched in the Ocmulgee River. The steel hull will be 120 feet long by 24 feet wide in the center, and the deck will be 12 feet above the bottom. The barge is planned to carry 250 tons of freight on four feet of water, with an additional foot of water required for each eight tons of freight added.

One of the marble plants at Knoxville is working 24 hours a day filling orders, and has in the past six months added \$30,000 of machinery to its equipment.

Improvements under way at St. Augustine, Fla., represent an investment of \$100,000.

North Carolina Active in Road Building

[Special Correspondence Manufacturers Record.]

Southern Pines, N. C., April 30.

One of the most promising forward movements in the entire South is the road work that is under way in the State of North Carolina. It is only a few years ago that the idea was conceived that a State as thinly settled as this could afford to have good roads in the country districts. Then, probably, the coming of the automobile helped things along. The discovery of the sand-clay road expedited matters, for it showed the South how to have the best road system of the world with the least possible cost. The result is a road development in North Carolina that is probably without parallel in road construction since the morning of creation.

The sand-clay road is a revelation of usefulness, durability and cheapness of construction. Beyond a doubt it is one of the great assets of the South. Where a good road can be built for \$300 a mile and maintained for \$50 a year it gives the community where it can be built a benefit of several thousand dollars a mile over that territory where roads cost from ten to fifty times as much. A mile of permanent road in Allegheny county, Pennsylvania, that costs \$18,000 a mile taxes the community as much to create as 60 miles of durable road in Moore county, North Carolina. For the cost of three miles of road in Pennsylvania, Hoke county in North Carolina has provided a fine system of almost 200 miles and made the county accessible for travel in every township. It is true that roads cannot be built at this low cost in all sections of the State but cheap roads are possible in all of the sandy section, for sandy country means good under drainage, which is the fundamental of a good road, and which is why a sand-clay road is a durable road. A road that is drained thoroughly does not freeze in winter, and freezing in winter is the chief agent of destruction of roads. The road on a sandy soil stays dry, and it never freezes and heaves to destroy the surface. That one feature is worth thousands of dollars to every mile of road in the sand belt of North Carolina.

Until six or eight years ago North Carolina seemed reconciled to its intolerable roads. Then a spontaneous movement seemed to break out in several places. Around Charlotte the macadam road found favor, and the macadam roads of Mecklenburg have become famous, as they deserve, although they are found to have some weak spots. In Moore county the sand-clay road developed most rapidly. Leonard Tufts of Pinchurst saw the absolute necessity of better roads, and with the aid of some of the neighbors he commenced a short stretch of sand-clay. The result was so surprising that a road was completed between Pinchurst and Southern Pines. That settled it. More sand-clay road was demanded. The antiquated system of building road by having the citizens of the township out at odd intervals to shovel and dig a little was seen to be useless, and a bond system was adopted and township money provided to build roads on a cash basis. The experiment was tried with certain misgivings, but it was a success. Then the infection started, and in a year or two it was the boast that 100 miles of sand-clay road could be reached from Pinchurst; then 200 miles; then 500; then 1000, and now the mileage depends exactly on the distance you want to travel, for Pinchurst is connected with all of the continent.

A map of the good roads of the Sandhills country at the present looks like the bottom of a flour sieve. Just to appreciate the rapidity with which roads are being built now it is suggestive to take a look at Harnett county. Last October Lillington began the construction of the first roads in the interior of the county. In November another township started on roads. More followed quickly, and in April seven townships had voted bonds and begun the construction of good roads. The Harnett roads are as new as a pin, but they are models, and today Harnett is connected at Sanford with the Lee county system, Lee county has just connected at Cameron with the Moore county system, and Moore connects with all the roads of the West and South. Six months ago Harnett and Lee counties were shut in from the world. Today a car may set out from Harnett county and travel to Florida, to Massachusetts, to Iowa or the Rocky Mountains, or anywhere.

Rapidly this road movement has been pushing forward, trying to crystallize in intelligent systems as well

as in local township and county units, until the result is broadening into a State and National unit. From New York to Atlanta was projected the National highway. That is practically completed in North Carolina, and in most of the other States it has become a right good road. The Capital highway is nearly finished through North Carolina, and also from Washington to Savannah and Atlanta. But the movement that made these roads has gone far beyond the original idea. At present the Capital highway, on reaching Raleigh, moves eastward from the straight line and passes Fayetteville and Raeford on its route to Pinchurst. But the roads through Lee county will bring a straighter line through Lee and Chatham, the road diverging eventually so that there will be two lines, one by way of Raleigh and Sanford to Pinchurst, and one by way of Durham and Chapel Hill, the seat of the university, and from there to Pinchurst. But before the roads are completed through Chatham county it is likely that Harnett county will present a shorter route than exists at present for the through line from Raleigh to Pinchurst and, in all probability that will be a Capital highway.

Engineer W. L. Spoon, of the Government service, says he wants to have all of these Southwest road links in the Capital highway, so that it can go from one capital to another by various routes. He also wants to have diverging lines run from important points to points on the other through roads, as from Pinchurst he proposes a line west to Charlotte to connect with the National highway. By the time Lee county and Chatham build their direct line from Sanford to Raleigh Mr. Spoon will have three routes from Raleigh to Pinchurst, and he proposes to maintain each separate one as a Capital highway, for he wants to make all the main roads of the State substantial Government roads. The importance of this plan is beyond power to estimate. It is stimulating North Carolina to road development that nobody can realize yet.

The attitude of the people is remarkable. Lee county is typical of the situation. Something over a year ago Lee commenced to build good roads under a decided opposition. Bonds were issued after a severe struggle and the work was carried on in the face of continual criticism. But a good road is the best argument in favor of road improvement, and after building 40 or 50 miles of roads Lee county voted on another bond issue of \$100,000. The bonds carried. Men who had emphatically opposed good roads tried out the mileage that was constructed, and they wanted more. The enthusiasm is pronounced.

All over the State the sentiment is aroused. Money is being raised in all conceivable forms. Davidson county has been allowed by the Legislature to issue \$300,000 in bonds for roads. Other counties have voted the bonds in big or little sums themselves. Other counties work in township units. Townships are voting as high as \$50,000. In other instances individuals are uniting to build roads through private effort, and all they ask of the township or county is to locate the road so that when built it may be a permanent highway. J. W. Johnson, a leading farmer of Hoke county, was county commissioner last year. Seeing that there were more demands for roads than the road fund would pay for, he voted for good roads as far as the money would go, then he turned in and built a good road himself from one of the completed roads out to his farm, a mile or so, and turned it over to the township to be a link in system when the road is extended to another road which will make it a main road through his section. To supplement the township and county fund farmers along many of the roads have subscribed cash or work to help encourage roads that were projected, but not yet built, because of shortage of funds. The Capital highway between Southern Pines and Raeford was largely built by private enterprise, as was the road from Aberdeen to Raeford, and as one of the farmers along the road said the other day, "these roads cost us about \$300 a mile, but if you would offer us \$10,000 a mile to give them up we would tell you we would not let them go for five times that money. We know what a good road is now. The reason we did not have them long ago is because we did not know."

Millions of dollars will be spent in North Carolina this year in road work, and this work will help mate-

rially as it has helped all winter, in keeping business moving in the State. The activity is general from one end of the State to the other. The work is done in a variety of ways. Some places contractors are given the road by the mile. Some townships have their own road forces. Some counties use convict labor. Some places hire the residents on the line to come out with their teams and implements. Nearly all of the money spent goes directly to the community where the road is built. Very little goes out for material. The results are surprising.

Possibly one of the most apparent results is the automobile travel. All over the good-roads section of the State the automobile has become perhaps the most common vehicle. The farmers have found the benefits that come from a buggy that will run into town and back in hardly more time than it would take to hitch up a horse, and the number of cars seen standing by the farmhouses along the road is astonishing. At first the farmer was hostile toward the automobile. Now he runs one of his own. A cotton planter can be seen coming out to the farm with his big seven-passenger loaded to the running-boards with cotton pickers. He will come to town with half a dozen bags of seed rye that he is sending out to a neighbor. The milk man runs in in the morning with the back part of his car loaded with milk bottles. At the tobacco warehouse in the fall cars come every day with loads of tobacco heaped up in the tonneau. An undertaker carries coffins out from town several miles in his big car. Occasionally you see a car back up in front of a loaded wagon and help the horses pull a big load up the hill so they can go ahead by themselves after the heavy struggle is over. The farmer has found that a good road and an automobile is a combination of unlimited value, although he had never suspected it.

The cost of good roads is now understood to be of small significance as compared with the benefits. The farmer who can haul five tons of fertilizer in a day where he hauled two on the old roads sees that in a day or two or three his hauling saves him more than his increased road tax, and he has quit objecting. He has become an advocate of good roads. The man who is looking for a farm objects to one not on a good road, but stops to figure on one that is on a good road. Farms on good roads have gone up in price at a surprising rate. Improvement on the good roads is the order of the day. Whether the good road is the cause or merely a sign of the changing conditions, it is a fact that in the good-roads country everything takes on a new air. Better stock is visible on the farms. Improved machinery is everywhere. More paint on the houses, new houses, new barns, more schoolhouses and better ones. Along the good roads is a continual indication of progressive thrift.

Whatever it is, whether the good road is responsible for the improvement or the improvement is the cause of the good roads, or both are merely the same outcropping of a new spirit of progress, they are all arriving. In every section of the State it is the same, all are struggling for good roads and the harmonizing conditions, and the roads are bringing strangers from all over the North. The automobiles that come through the State carry the name tags of nearly all the Eastern States from Illinois to Maine.

The signs all seem to indicate that the building of good roads in North Carolina has only reached a good beginning. Almost every day comes the news from some township or county that the work has been started, and this year will see more road improvement undertaken than ever before in the State's history. Every year sees more substantial work. Better grades, better alignment and wider surfaces are growing in popularity. Better bridges, more cement and stone culverts, more skill in getting more mileage for the same money are all visible. In the mountains grades are cut down boldly, and in the low grounds ditches are cut with but one idea in mind, and that is to make the best possible roads. The roads of New Hanover county, in which Wilmington is situated, vie with the roads of Buncombe, where the mountains shelter Asheville.

North Carolina is building for tomorrow, and when the world realizes what a system of roads is now pretty well connected up from the sounds to the mountains and from Virginia to South Carolina the State is certain to be the Mecca for an army of travelers, for it has the attractions to interest them and the climate to make automobile travel a delight at almost any season.

But the main thing is that the good roads have made

local transportation a cheap and simple matter all over the State, and it is only since that has happened that the people realize what a wondrous help cheap and convenient transportation is.

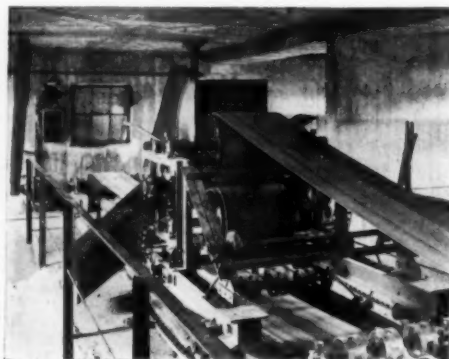
Sand and Stone Storage Bins.

People concerned with storage of sand and crushed stone, or similar materials, will be interested in the accompanying view of a reinforced concrete structure for those materials and the view of handling machinery. This plant was erected for the Builders' Supply Co., Cumberland, Md., and while under construction was illustrated and described in the MANUFACTURERS RECORD of February 18. Deverell, Spencer & Co., Baltimore, were the building contractors, and the Weller Manufacturing Co., Chicago, furnished the machinery. Two electric motors with belt and gear connections, built by



REINFORCED CONCRETE STORAGE BINS.

the General Electric Co., Schenectady, N. Y., are included. The equipment view is looking down the gallery, showing drive end of belt conveyor and structural steel tripper for delivering material into different bins. The building view is from side of bins where material is received from railway cars, showing clearly double-strand chain-bucket elevator for conveying material to top of bins. The chain-bucket elevator terminates in cupola, where are located the head pulley and motor, with reduction gears for driving machinery and also the turn-head, with necessary spouting. The row of steel windows just under roof line open into a gallery



MACHINERY HANDLING SAND AND STONE.

that runs over storage bins and contains belt elevator for distributing material to different compartments. The door at end of building also opens into this gallery, and is built of sufficient size to accommodate largest section of machinery and is arranged with outrigger for hoisting. The teams and auto trucks enter at end of building nearest bucket elevator, and, passing under bins, receive their load direct by spouts, after which the teams and trucks pass over a platform scale at other end of building. This building is entirely of reinforced concrete, 89 feet long, 30 feet high and 56 feet 8 inches high to top of roof slab. The first story forms a support for bins, and contains two driveways running under bins lengthwise of building. Each driveway is 9 feet 6 inches wide, and has clearance of 9 feet 8 inches in height to accommodate largest auto truck. The piers on which columns rest extend above level of driveways

and form a curb, the edges of which are armored with steel, and the exposed corners of columns are encased with angle iron to prevent wear from trucks.

TENNESSEE MANUFACTURERS.

Annual Meeting of the Association to Be Held in Chattanooga.

The Board of Governors of the Tennessee Manufacturers' Association has unanimously decided to hold the third annual meeting of the Association in Chattanooga, May 27, having accepted the invitation of the Chattanooga Manufacturers' Association.

This will be, without doubt, the best meeting yet held by the Association, for the reason that since its organization it has had a substantial and successful growth to the extent that there are members of the Association in practically every town in the State.

The Association numbers among its members about 700 of the leading manufacturing establishments of the State, and it is expected that the meeting this month will be largely attended by representatives from these concerns.

The officers of the Association for this year, to whom much credit is given for the success of the Association, are T. F. Bonner, Nashville, president; M. E. Temple, Chattanooga; Geo. L. Hardwick, Cleveland, and S. B. Anderson, Memphis, vice-presidents; Walter H. Clarke, Nashville, treasurer, and Chas. C. Gilbert, Nashville, secretary.

Southern Industrial Activities.

During April the Construction Department of the MANUFACTURERS RECORD published 5983 concise statements relative to industrial developments, building, financial and railroad operations and general business interests in the South and Southwest; these, added to the 12,147 similar items previously detailed, making a total of 18,130 such statements published by this department during four months—January, February, March and April. The summary follows:

Industrial and Developmental.	
Bridges, Culverts, Viaducts.....	63
Canning and Packing Plants.....	27
Clayworking Plants.....	17
Coal Mines and Coke Ovens.....	41
Concrete and Cement Plants.....	4
Cotton Compresses and Gins.....	21
Cottonseed-oil Mills.....	9
Drainage Systems.....	29
Electric Plants.....	140
Fertilizer Factories.....	10
Flour, Feed and Meal Mills.....	44
Foundry and Machine Plants.....	31
Gas and Oil Enterprises.....	93
Ice and Cold-storage Plants.....	62
Iron and Steel Plants.....	1
Irrigation Systems.....	1
Land Developments.....	59
Lumber Manufacturing.....	43
Metal-working Plants.....	7
Mining.....	62
Miscellaneous Construction.....	61
Miscellaneous Enterprises.....	122
Miscellaneous Factories.....	194
Motors and Garages.....	75
Railway Shops, Terminals, Roundhouses, etc.....	12
Road and Street Work.....	336
Sewer Construction.....	96
Telephone Systems.....	30
Textile Mills.....	23
Water-power Developments.....	6
Water-works.....	110
Woodworking Plants.....	42
Buildings	
Apartment-houses.....	121
Association and Fraternal.....	54
Bank and Office.....	91
Churches.....	112
City and County.....	91
Courthouses.....	27
Dwellings.....	693
Government and State.....	33
Hospitals, Sanitariums, etc.....	43
Hotels.....	63
Miscellaneous.....	71
Railway Stations, Sheds, etc.....	29
Schools.....	373
Stores.....	346
Theaters.....	27
Warehouses.....	54
Railroad Construction.	
Railways.....	112
Street Railways.....	13
Financial	
Corporations.....	116
New Securities.....	627
Fire Damage, etc.....	4,950
Machinery, Proposals and Supplies Wanted.....	347
Total for April.....	5,983
Previously detailed since January 1.....	12,147
	18,130

Metal spray processes in engineering and art is the subject of a paper to be presented by John Calder at the May 11 meeting of the American Society of Mechanical Engineers in New York.

Mississippi Paper Mill Working Twenty-four Hours a Day

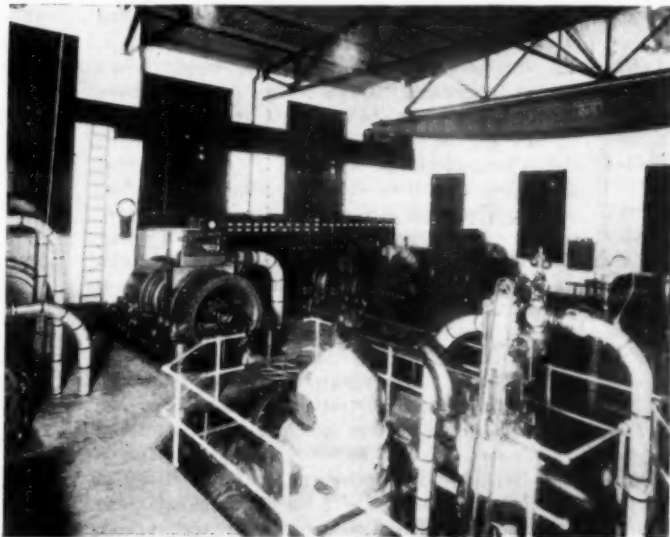


VIEW OF PLANT OF THE SOUTHERN PAPER CO. AT MOSS POINT, MISS.

The paper mill of the Southern Paper Co. at Moss Point is now entering upon the third year of its operations, and it is proving to be a success. Some important changes have been made in the mill. The huge grindstones in the beater-room have been dispensed with, and in their place have been installed eight beating engines and six refining engines, each with its individual motor. The beating engines automatically receive the pulp when it comes from the retorts and tear it up into the smallest possible pieces, when it is automatically transferred to the refiners, where all coarse particles are removed. The difference between the pulp as made by the old process and by the new is hard to tell in words, but is readily understandable by one who takes a handful of each kind of pulp in his hands. In the old pulp one could feel the fiber, the new pulp is like a mass of soft jelly, and the finished product is of a much better quality.

The company has now under way a new boiler-house, adjoining the old, which is being built of brick and steel. It will measure 46x50 feet by 40 feet in height, and will have a smokestack 185 feet high by 6 feet, natural draught. It will be equipped with an economizer for the boiler feed water, and also one new boiler feed water pump. These new boilers are for auxiliary purposes. As the mill runs 24 hours, the furnace grating soon burns out and much time has been lost in waiting for repairs. The machinery furnishes power to an immense dynamo, which, in turn, makes the power for the different machinery in the mill.

This mill employs 250 men, who work in shifts of eight hours each, and makes paper from 17 pounds per ream to 120 pounds per ream. It is made in any size roll that the purchaser may desire. The writer saw in the finishing-room rolls of paper not more than 4 inches wide, mere strips, up to rolls that were 136 inches wide,



INTERIOR OF ELECTRIC POWER-HOUSE.

there being two paper machines in the mill, one a Fourdrinier of 136 inches width and a Yankee of 110 inches, the latter giving the paper a finish on one side. In the finishing-room one learns quite a valuable lesson in economics. In cutting the paper there is quite a number of side rolls and other wastage, sometimes amounting to three or four tons a day. Every bit of this is carefully saved and once more converted into rolls of paper.

The output of the paper mill is 35 tons of paper a day, and this requires something like 70 to 80 cords of pine wood. The chemist of the mill, Mr. R. H. Loftman, tells the writer that up to the present no by-products have been made, but that during the coming season such by-products as turpentine and liquid resin would be

produced, the latter being extensively used in the manufacture of soap. Wood alcohol will not be made, as a recent act of the Legislature of Mississippi forbids its manufacture in this State. The Legislature no doubt thought it was a beverage, not knowing that it can be used only in the arts and manufactures, as one who drinks a dram of this fluid will hardly live to drink another.

Owing to the depression in the lumber market, the sawmills of Moss Point and vicinity have not for some time been supplying the paper mill with the mill refuse or slabs, and the mill has had to depend for its raw material upon the abundant supply of second growth of pine, with which this section abounds. Wherever the land has been cut over and abandoned, and especially where it has been tilled or charcoal kilns have been burned over it and then abandoned, the winds convey the mast or seed of the loblolly and short-leaf pine to the abandoned fields or coal beds, and there springs up immediately a dense grove of second growth pine. That the trees are as thick as the hairs on a dog's back does not appear much of an exaggeration to one who views one of these groves from a short distance. The trees are so thick that they do not put forth any lateral branches, but shoot straight up in search of the light, and though they rise to a height of 80 to 90 feet, they are seldom more than 6 or 8 inches in diameter. This timber unless creosoted is absolutely worthless for building purposes, but it is exceedingly rich in resinous matter and valuable for wood pulp. The paper mill has opened a market for this second growth pine, and is now consuming something like 24,000 cords annually, converting into money something that hitherto has been a grievous burden to the would-be tiller of the soil.

CHARLES E. CHIDSEY.

Pascagoula, Miss.

An Ambitious Purpose.

White River Development Association,

Batesville, Ark., April 29.

Editor Manufacturers Record:

The White River Development Association has been organized at Batesville to develop the natural resources along and adjacent to White River from Newport, in Jackson county, to the Missouri line, in Marion county, Ark., a distance of some 146 miles; the urging of the building by the United States Government of the other seven of a system of ten locks and dams on upper White

River above Batesville, Ark., for the purpose of creating slack water navigation and giving this section cheaper transportation facilities, making White River navigable at all times of the year from Cotter, Ark., to its mouth; using the wasting waters that will flow over these dams for the purpose of generating electric current to operate mills, factories, smelters (the largest and richest beds of manganese ores and the richest zinc mines of North Arkansas lie along and tributary to this stream), electric railroads into the mountainous section of North Arkansas, lighting, etc.

It is expected when we accomplish this we will be

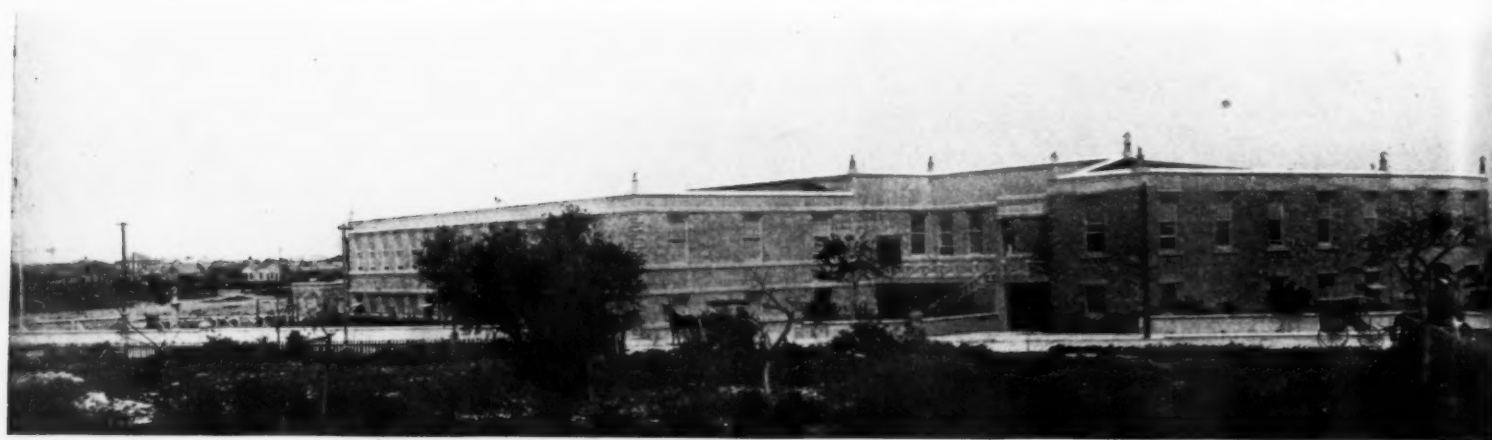
able to attract millions of dollars for the development of our zinc, lead, marble, glass sands, limestone, manganese ores, etc., all of which are here in abundance.

There is no section richer in resources than this White River country.

A. A. WEBBER, Corresponding Secretary.

A handsomely illustrated supplement in book form, showing the attractions of St. Lucie county, Florida, has been published by the St. Lucie County Tribune of Fort Pierce.

One of the Model Cigar Factories at Key West



EXTENSIVE CIGAR PLANT OF THE RUY LOPEZ COMPANY AT KEY WEST.

At the southernmost point in Florida, now linked to the mainland by the wonderful extension across the keys of the Florida East Coast Railway, is Key West. Its strategic importance in a commercial sense has only begun to be realized and its possibilities for industry have by no means been exhausted. But in recent years it has become one of the greatest centers of cigar manufacturing in the world, and the output of the factories, employing thousands of workmen, has an annual value of millions of dollars. The extent of this industry and the character of the buildings in which it is housed are indicated in the accompanying illustration of the plant of the Ruy Lopez Company.

The factory building is of concrete. The outside walls of a two-piece hollow-block system, one-foot walls surmounted by reinforced monolithic belt course 27 inches in height. The sills and lintels of both the ground and main floor are reinforced monolithic concrete courses, locked into the wall by lugs of concrete, this running entirely around the building and greatly strengthens the wall. Every 17 feet is reinforced with two steel rods running from the solid rock under the foundation to the coping; these rods are tied into the roof cords and girders. The interior walls of the building around the court yards are monolithic concrete walls, very heavily reinforced, and all dimension timber is fastened into these reinforcements. In the outside walls wherever reinforcing appears the wall is pilastered by solid concrete poured in very wet and tamped. The inside walls are all 18 inches thick around the court except that portion which supports the tank, and that is two feet thick, with I-beams over openings, and six inches from the surface and on 11-inch centers, is reinforced by 1½-inch deformed steel rods. The walls only support one floor and the roof. The extreme height of the outside walls is 27 feet, the inside walls 31 feet.

The interior construction being heavy timber uprights, all Y-braced, no timber being less than 10 inches square, it is of the slow-burning semi-fireproof construction. The supporting timbers of the lower floor are 12-inch timbers. All dimension timber is bolted with machine bolts and beveled washers, not a nail being used. The floor and roof rafters are all 2x12 on two-foot centers, and thoroughly braced. All dimension timbers are placed in spans 16 feet 8 inches centers across the building, and 17 feet centers lengthwise.

The structure is really two buildings separated by two courts 19 feet wide and connected by three 19-foot monolithic small buildings which have two courts between them; the main building is 213 feet long by 52 feet wide, the other building 143 feet 8 inches long by 52 feet wide, with the courts between them. The main building has two L's, one containing the trimming-room on the upper floor and the shipping-room below, the other L forming the office. The ground floor is entirely of concrete with 22,528 square feet. The upper floor has 20,808 square feet, and is of wooden flooring, 2½-inch material. On the ground floor is a monolithic vault for storing tobacco, 19x40 feet, reinforced. The roof is concrete slab laid on ceiling, with fiber material under the concrete. A tank of 12,000 gallons capacity is placed over the small building, connecting the main buildings at the west end; it is for well water for purposes of flushing and fire protection, connecting with

standpipes 50 feet apart on all floors. The building lies diagonally across the block, and occupies nearly all of the block. This peculiar placing of the building was done to insure absolutely perfect light for the packing-room, which needs as good a light as any industry in the world.

The form of the building has a number of advantageous factors. The factor of safety was a first consideration. The building is spoken of as ridiculously strong, but it has to withstand high wind pressures, the shock of blasting and heavy gun firing at the forts. The low spread form of the building supplies every element of strength. It also reduces labor; not more than 500 pounds has to be hoisted per day, and that only 11 feet, and there is no need to drop material, which always means breakage; the result is handling material a less number of times, which is a great economy. The building is easier to keep clean, and permits more constant overseeing than any other form. Every manufacturer in a line of business handling valuable material, whose product is very much a question of labor cost, and where he must employ a large number of people, knows the advantage of having his departments so planned that there is no communication between the employees of each department; that is, departments so separated that practically the only communication from one to the other is used by foremen and superintendent. This factory is said to be better planned for that purpose than any other factory in the United States in this line of business. The means of entrance and exit are all within 50 feet of each other at one central point, but barring any general communication.

The water supply for drinking and tobacco wetting purposes is rainwater stored in a circular cement cistern with capacity of 117,000 gallons. The roof is in the center, supported by a hollow column built of cement block, and the spacings are filled with selected charcoal. The service pipes lead from this. The cistern is built from the surface of the ground up, and it syphons to every portion of the factory needing much water supply. Well water is used for flushing and cleaning. The lower floor, which is concrete, can be flooded without any detriment. The State Board of Health gives the factory a rating for cleanliness at the head of the list.

The capacity of the factory, extreme, which would be a little crowded, is about 900 cigarmakers. This would mean a total of from 1200 to 1300 employees, but that would be crowded. A comfortable condition would be 700 cigarmakers and about 1000 employees total. The factory could easily make 20,000,000 cigars a year. In fact, it has had a period when it made more than 1,500,000 per month. The factory is so planned that it works economically at a 5,000,000 production. This is on account of concentration in the plans at a central point, and an increased production merely means spreading from that point in all departments.

The cost of the building was approximately \$53,000, with all department partitions and permanent fixtures. This takes into consideration a conservative calculation of the salvage of the building that was destroyed in the hurricane of 1909. Furniture and fixtures have been built mostly in the factory, using the regular labor at idle times. All of the outside work, such as cement wall and ornamentation, and practically all of the repairs

in this line have been so done. The furniture and fixtures are up to date, and include many innovations and labor-saving devices.

Improving Key West Harbor.

So valuable are the results of the wire drag work done by the United States Coast and Geodetic Survey in the vicinity of Key West that the Navy Department has requested the extension of the work in the region farther to the westward. As Key West is a naval base, besides being a railway terminus and an important commercial port, the necessity of having the whole region systematically examined with the drag is apparent. The principal work of the past season was a very close examination of the west channel from a point west of Man Key for a distance of 10 miles to a point south of the eastern side of Marquesas Key, and an examination of the doubtful portions of the channel from Key West to Dry Tortugas. A depth of 28 feet is indicated on the charts, but many shoals and coral heads with only 22 feet were found. The coral formation in that region abounds in abrupt pinnacles which it is impossible to detect with certainty with the sounding lead, as they are of very small area and project irregularly from the general contour of the bottom. The United States Engineers are improving the principal channels by blasting and dredging.

In all about 100 shoal spots were found with the drag during the season, and of these, 13 were discovered in a single day. So numerous and so irregularly located were these shoal spots that they could not be described adequately by positions and bearings, and in order to show them it was necessary to publish sections of the chart with corrected soundings in the notices to mariners.

Key West is the terminus of the Florida East Coast Railroad, and is connected by steamship lines with New York, Tampa, Mobile, Galveston and Havana. The harbor is west and north of the city, which is on the west end of the island and is navigable for deep-draft vessels. The anchorage is due west of the city, and north of it, in a pocket between the shoals, is Man-of-War Harbor. The wharves along the west side of the city belong to the Navy Department and lighthouse service; north of these are the commercial wharves, and the railroad wharf is the most northerly of all. Large vessels may go to most of these wharves. There are marine railways for hauling out vessels up to about 1000 tons.

Some of the principal channels approaching Key West have been improved by the United States Engineers by blasting and dredging to the required depths, and the drag work has been utilized by them in verifying the results of their work.

Secretary F. R. Fenton of the Investment Bankers' Association has issued an interesting bulletin covering new and pending legislation. In addition, the tax situation and remedial measures are discussed quite generally by the committee on taxation.

For Full Development of Southern Agriculture

By M. V. RICHARDS, Commissioner, Industrial and Agricultural Department, Southern Railway.

In many respects it is fortunate for the South that its development was halted for many years. Its large areas of unutilized lands, its wonderful unoccupied opportunities place it in a position to not only correctly solve for itself the problem of proper rural and urban development, but to develop in a way that will help the whole country in solving its problems of food supply, of undue concentration of people in the cities, and of the many questions which only a proper proportion between the various interests will settle.

The South has made commendable progress in its agriculture. Fortunately for it there has remained a larger rural population, comparatively, than in the Northern States, while its aggregate productiveness has increased in greater proportion than in most parts of the North. For steady and well distributed prosperity it is unfortunate that it has remained too largely a one-crop region.

The value of all agricultural products in the South in 1900 was \$1,564,069,000, and in 1910, \$2,132,724,000, an increase of \$568,655,000. This was over 36 per cent., a rate of increase which certainly indicates a growing prosperity on the farms. The increase was in part due to advancing prices of agricultural products, but more largely to the additional acres cultivated, the growing importance of the trucking districts and larger yields per acre. The estimate for the 1914 crops made by the MANUFACTURERS RECORD is \$2,289,542,000, or \$157,000,000 more than in the last census year. In 1912 and 1913 the value of the crops was much greater than that for the crops of 1914, the decrease being due to the great decrease in cotton prices.

Much of the South is given up to the large plantation. The large plantation can prosper under a one-crop system, but the small farmer cannot. That system will always mean occasional years of business depression in the South, of injury to all classes of the people. We need diversification of crops not merely to make a more general farm prosperity, but to grow our own foodstuffs and feedstuffs, to preserve our soils and to utilize all our lands.

The last 10 years has witnessed the greatest advance in agriculture the South has ever known. We have learned more about our agricultural needs, the possibilities of our soils, and large numbers of our farmers have learned to make better crops. Practical farm education, in the work of our agricultural colleges, high schools, experiment stations and farm demonstration work are revolutionizing Southern agriculture. See what they have done merely in a crop production way. The average acre yield of cotton has been increased in almost every State, as has that of corn, oats, hay and of almost all other crops.

The average corn crop of the United States in 1913 was 23.1 bushels to the acre, and in 1914, 25.8 bushels. In 1913, Maryland, Virginia, West Virginia and Texas were the only Southern States which grew as much to the acre as the average yield for the country, while in 1914 only Maryland and West Virginia made as high an average yield. The States in the South which, from their longer growing seasons, should have produced far more than the average yield, were way below it. It was not because the South cannot do it that she had no States to make from 33 to 42 bushels to the acre, the yields of such States as Ohio, Indiana, Michigan, Wisconsin, Iowa, Pennsylvania, New York and New Jersey. Neither was it merely because of an unfavorable season that the yields in the South were so low. It was because of either careless or ignorant farming, or both. The work of the farmers' co-operative demonstration work of the United States Agricultural Department and other like agencies show this, and as well point the way to better and more profitable farming in the South. The farmers of the South who worked in co-operation with this demonstration work in 1913 made an average yield of corn per acre of 35.9 bushels, as against an average in the same States of 29.2 bushels, or 75 per cent. more, and more than 10 bushels to the acre more than the average yield for the country. In Virginia the average yield of demonstrators was 48.1, in North Carolina 45.1, Mississippi 41.9, Maryland 40.5, Tennessee

40.1 and Alabama 40. Demonstrators grew 1004.9 pounds of seed cotton to the acre, while the average for the cotton States was 546 pounds. In 1914 demonstrators in West Virginia averaged 51 bushels of corn, in North Carolina 45, Georgia 40.1, and in other States up to 36 bushels, as against State yields of from 17 to 31 bushels.

In 1914 the agricultural field agents of the Southern Railway system co-operated with farmers who grew 24,287 acres of corn in fields of from 5 to 200 acres, and the average yield on all these acres was 40.8 bushels, as against 18.4 bushels in the same States according to the Government estimates. Many fields of from 10 to 100 acres averaged from 50 to 83 bushels.

The difference between the average yield and that from the demonstration fields was most largely due to the knowing how to grow the crops for profit, showing that it is a matter of the right kind of education.

The diversification of our crops is necessary not only to the continued improvement of the agricultural South, but for the very preservation of our agricultural interests and for the continued development of our industries. Perhaps we may properly say it is the first of the needs of the agricultural South.

The climate of the South, the variety of soils and the favorable location as respects the great consuming districts of the country and the ease with which many of the products of our fields may find their way to foreign markets give use very great advantages for the successful growing of the greatest variety of crops and for the building up of an immense stock raising and dairy industry. The utilization of all our opportunities and advantages will make the South the most prosperous agricultural section the country has ever known. The South can easily become an exporter of foodstuffs and feed as well as of cotton, rice and tobacco. We are today sending to the North each year millions of dollars' worth of fruits and vegetables, and while we are great importers of meats, we are shipping many cattle and other animals to Northern packing-houses. If live-stock raising is developed as it should be the nation will soon be getting a very large proportion of its beef and pork and mutton from the South.

The first thing before us now is to feed ourselves. I do not look for a time when, in the ordinary course of business, there will be no movement of meats and feedstuffs and of dairy products and canned goods from other sections to the South; but I do look forward to the time when for every dollar's worth of such products shipped from the North or West into the South, either those sections or the Central American, South American and European countries will be taking an equal or greater amount from Southern farms. The first aim on the part of our farmers should be to grow all of their own supplies they can. We must get rid of the system of buying foods and feedstuffs and horses and mules on both our big plantations and small farms.

The South can easily make practically all the products to feed itself. The problem is to show our farmers the profit in diversified farming and teach them how to carry it on profitably. The farm demonstration work is not only the greatest work for agriculture ever done in the South, but it is the greatest the United States has known. The way to bring about the general improvement in our farm methods and customs has been pointed out, the start in bringing about results has been made. The duty before the leaders in constructive work in the South is to see that the lessons learned are brought home to all the people, and that the individual farmer applies them.

There are no available statistics to show just how much the South is today dependent on other sections for its foodstuffs. It has been said that one State buys each year from the outside \$80,000,000 worth of foodstuffs, feeds and mules. The National Department of Agriculture a few years ago found that in 25 cities of the South, from Virginia to Texas, about as many million dollars' worth of dairy products were imported from the North. And yet the South has advantages for dairy-ing which are not duplicated in other sections.

Careless and ignorant farming has been the drawback

of American agriculture during most of our national life. It has resulted in the waste of our soils, in unprofitable farming and consequent lack of rural improvement, stagnation in many communities and an undue movement from the farms to the cities. We must expect careless and ignorant farming in an ignorant population. In the South today we need more attention to the cause of general education. In many States the educational movement is being organized along the best lines. We have learned that our public schools must pay attention to agricultural education, and provision has been made in many of our States for teaching practical agriculture in rural, city and county high schools. This is good; but one of the great needs toward the proper development of Southern agriculture as well as of all the interests of the South is an extension of our school systems so that there will be a wider distribution of education. Demonstration methods in agriculture and co-operative movements for a more varied and better farming will be successful only to the degree that the people these movements reach are able to follow lessons and the example given. The present public school system of the South is less than 40 years old. It has made immense advances in that time. We are steadily increasing the amount of money devoted to public education, the character of buildings and equipment, the standard of the teaching and the whole tone of the schools. But we have only started. Cannot we travel faster? I have sometimes thought that in the South the proportion between appropriations for the common schools and the institutions for higher education is too great. I would surely not lower the appropriations for colleges and technical schools. I would increase those for the common schools in the rural districts.

Diversification is the hope of Southern agriculture, a diversification not merely for the soil's sake, but to feed the South with its own products, with the ultimate aim of a surplus for export. To secure that proper diversification proper methods must be taught and there must be a sentiment created and maintained which will demand and give the education to our rural population which will enable all classes of our farmers to apply proper methods, and as well to know and solve the problems which always come to the farm and the farm community.

In securing a proper diversification of crops in the South other questions and needs present themselves. There is always the question of the right crop to raise for profit, and that means to a great extent the question of market.

Other questions familiar to most of you in connection with the development of Southern agriculture worth mentioning are the co-operation of farmers in marketing, the co-operation of town and country for mutual benefit, the improvement of the country highway systems and a change, which, in many parts of the South, will put more owners and operators of farms onto them, so that the best class of rural communities will be brought about. All of these are matters intimately connected with the proper advance of Southern agriculture. Another one must not be overlooked. That involves all the questions which concern the farm household, sanitation on the farm, improved methods of household work, better surroundings and conditions for the average farm mother and daughter.

JACKSONVILLE'S BUILDING ACTIVITY.

Municipal Docks and Terminals, Schools and Residences Among the Undertakings.

[Special Correspondence Manufacturers Record.]

Jacksonville, Fla., May 1.

Although there were not as many tourists here as were expected last fall, and the fruit crop did not pan out as it has in the past in Florida, all of which has had its effect on Jacksonville, the metropolis of the State, these facts seem to have had very little disheartening effect on the business men here. From all indications Jacksonville is well along into the most prosperous year of its history.

Construction activity here is decidedly pronounced. The city and county have taken the lead and are planning and have under way extensive public improvements, which have been needed for some time. The plans are so comprehensive in scope that, when carried out, they will place this community years ahead, thus

striking a pace that will keep other local interests on the jump.

The most important construction now under way are the municipal docks and terminals, which are being constructed in the northern part of the city on 150 acres bordering for 4200 feet on the St. John's River and which will cost ultimately \$1,500,000. The Port Commission, composed of 15 of Jacksonville's representative business men, has charge of the work. Montgomery Corse is the chairman of the commission and F. W. Bruce is the chief engineer in direct charge of all the work.

The State Legislature in October, 1912, passed an act authorizing Jacksonville to vote bonds for the amount mentioned, but the actual work did not begin until in October of last year. The work will be completed in sections as the facilities they will create are needed. A contract was let and completed recently for 5230 feet of bulkheads. Lackawanna steel was used exclusively in this work. This represents about one-third of the whole contract.

The contracts for the railroad, dredging and piling have been let also, but not completed.

Two of the six piers are now in course of construction. These will be uniform, each to be 1000 feet long, 260 feet wide, accommodating four railroad tracks to each pier, and with two steel constructed sheds covered with galvanized iron, 73x800 feet. The slips will be 260 feet wide between the piers.

As the city terminal is one and one-fourth of a mile from the railroads, it will connect with a track that will be built to that point. Here it will touch the lines of the Seaboard Air Line, Atlantic Coast Line and the Georgia, Florida & Southern Railroad. An interchange yard will be built on the 600 feet of right of way owned by the commission, providing for the necessary distributing and storage tracks.

One of the most recent developments of the general plan is the proposed cotton compress. A special committee has been appointed, with Mr. Corse as its chairman, to investigate and let the contract for the compress. No plans have been made for it so far, but it is presumed that it will have an annual capacity of 150,000 bales.

A brick administration building will be erected 45x45 feet. It will be two stories high. An artesian well has been sunk and tested out today. It flows 2,000,000 gallons every 24 hours and will furnish water for the whole system. The first unit of the terminal, according to Mr. Bruce, will probably be ready for use by the first of next year.

Next in importance to the terminals is the voting recently of \$1,000,000 worth of bonds for schools in Duval county. The most of this will be spent in Jacksonville proper, and the work will begin as soon as the bonds have been sold and the architect has been selected. This will probably be some time this summer.

The Southern Investment & Amusement Co. will soon have ready for use a theater that will cost \$60,000 and will have a seating capacity of 1200. The contract was let to Jacksonville Contracting Co., and the architects were Benjamin & Ball, associated with Harry M. Prince.

There is now in contemplation a building to be known as the Prewitte Apartments. R. A. Benjamin is the architect, and advises that while the plans are tentative, it will contain about 20 living apartments. It will be located in Riverside.

It is rumored that one of the most popular tourist hotels in Jacksonville will be torn down and replaced by a similar building costing approximately \$1,000,000.

The city let the general contract this week to F. W. Long & Co. to erect an armory which will cost, with mechanical equipment, approximately \$150,000. The plumbing and heating was let to Charles G. Belote and the electrical contract to the Ingram-Graham Electric Co. Subcontracts let by F. W. Long & Co. were as follows: Roofing, Ford Roofing Co.; brick, A. C. Conyers, and the steel to H. H. Hull, representing the Price-Evans Company of Chattanooga, Tenn. The Talley & Sumner Company prepared the plans.

W. B. Camp is preparing plans for a residence for W. A. McDuff to cost \$25,000.

W. C. Hodges of Tallahassee is just completing a home in South Jacksonville; cost \$16,000.

Mark & Sheftall have prepared plans and let contract to Buckner & Fitchner for a building to be erected, by the American Trust Co., which will be

leased to the Postoffice Department and used for a substation; cost \$18,000.

Hillyer & Speering Company has the general contract for the construction of the Duval-street viaduct, which is being erected jointly by the city and the Seaboard Air Line over the latter's tracks. It will cost, according to the amount stipulated in the application for permit to build, \$120,000.

During April 55 permits were taken out, representing an outlay of \$216,335, in Jacksonville. The viaduct, mentioned above, is represented in the April permits.

"The most interesting, as well as the most important, item in the bunch is that of the schools," said L. Smith, assistant secretary of the Builders and Traders' Exchange, after looking over the list. "Schools not only mean immediate work for the contractor and more orders for the builders' supply man, but it is creating the proper school facilities for our children. Prepare the children of today for the future—their future—and in the future they will take care of Jacksonville. That is why we are making firm our foundation now. One million dollars will help immensely the cause of education here."

Mr. Smith predicts that \$3,000,000 will be spent for school construction in Florida in the next 12 months.

ROY G. BOOKER.

THROUGH BANKERS' EYES.

General Business Conditions Reflected in Reports by Federal Reserve Agents in the South.

From digests of reports of general business conditions in their respective districts made by the five Federal Reserve Agents in the South to the Federal Reserve Board for use in the Federal Reserve Bulletin are extracted the following:

District No. 5—Richmond.

In this district conditions are improving and give promise of continued betterment. Progress is still retarded by the conditions arising out of the war in Europe, but it is believed that a quick readjustment will follow a termination of the conflict.

There is a decided improvement in cotton prices and confidence as to the future. Cotton milling is considered prosperous, particularly with those mills which purchased the raw material at its lower prices. The shortage of dyestuffs is causing some uneasiness.

District No. 6—Atlanta.

While the commercial and industrial affairs of the sixth Federal reserve district do not show remarkable improvement, there is an increased activity of sound and conservative nature in all lines. Especially is this true in commercial enterprises, as shown by the increase in receipts of railroads, hotels, and the postal department, due largely, no doubt, to the advance in the price of cotton and to the growth of confidence among the business and financial element.

The industrial and manufacturing interests of the district are again on a normal basis. The holding back of the cotton crop and the marketing of it in the spring instead of in the fall produced rigid economy. Now that cotton is going to market, conditions are improving in all lines of trade. The result of such rigid economy and the necessity for diversification of crops promise good results to agricultural interests.

The bank statements as of March 4 showed a marked improvement over previous statements, and the indications point to an easy money market through the summer.

District No. 8—St. Louis.

Demand for general merchandise has improved, and while below normal, generally speaking, sales and collections for the first quarter of the year will show an improvement over the closing quarter and compare favorably with the first quarter of the past year.

Some portions of the section have suffered from successive droughts, and Kentucky reports that while a good deal of its tobacco is sold, it is not delivered, and, consequently, the sellers have not as yet collected the money due them.

The underlying condition of business in Missouri outside of St. Louis is sound, with prospects of good crops and reason to believe that conditions will continue to show improvement. Conditions are also better in Ar-

kansas, but no decided improvement is anticipated until fall, it being largely dependent upon whether cotton and lumber sell at a fair profit. The Arkansas banks, especially the small ones, show a loss in deposits as compared with last year. Conditions continue to improve in Illinois, and there is buying of horses and cattle. The same is true of Indiana, and if crops turn out well, as there is reason to anticipate, marked changes for the better will be shown. Manufacturing and jobbing in Kentucky is not yet up to normal, but the tendency is good. Crops promise well, and this is expected to put Kentucky into good business condition. The situation in Mississippi is not unlike that in Arkansas, and if crops turn out successfully a ready recuperation from last year's losses is anticipated. The present is, however, a time of economy and inactivity. Collections are reported good.

Business conditions in Tennessee are gradually improving and prospects are good.

Commercial paper rates in St. Louis are from 3½ to 4 per cent., but in the other States of the district they are from 6 to 8 per cent.

District No. 10—Kansas City.

Agricultural and horticultural conditions throughout this district are almost perfect, with every promise of abundant crops. The supply of loanable funds far exceeds the demand in practically all sections, with the result that most banks are not finding as much paper as they could use. Large borrowers, especially stockmen, knowing the easy money conditions, are demanding lower rates, and are quite likely to reap the benefit of lower rates this spring than they have had for many years. It is, however, expected that during the next few months loans will materially increase.

District No. 11—Dallas.

There has been a steady and conservative increase for the retail trade in the larger cities of this district, and the feeling throughout the entire business, agricultural and livestock section is as a whole encouraging. Cotton and cottonseed products show an increased demand and sales at satisfactory prices.

Crop preparations are well advanced under favorable conditions, and an excellent season is anticipated. The acreage for small grain and forage crops has increased. Reports from cattle and livestock interests show conditions satisfactory and the ranges in good condition.

Banks in agricultural and livestock districts report improvement in their business, with money easy in the larger city banks at normal rates.

There are some new enterprises under way, and construction work indicates some increased activity in that direction.

Warrior River Navigation.

The formal opening of Lock 17 in the Warrior River, assuring all-the-year-round navigation from the Gulf of Mexico into the heart of the mineral regions of Alabama, is expected to be the feature of an inspection on May 13 of the Warrior River improvement by the Secretary of War, Senators Bankhead and Underwood, Alabama members of the House of Representatives, and others. Mayor H. Pillans of Mobile, in urging business men of that city to participate in the event, says:

"The meaning of this to the port of Mobile, with its deep water to the sea and its great shipping facilities, it is difficult to measure, but there does not seem to be any possibility of doubt that within a reasonably short period of time, after the existing war has worn itself out and the channels of commerce are reopened throughout the world, Mobile must be made the port of outlet and inlet from and to the increasingly rich coal and mineral regions of the State. This situation has been so long looked and hoped for that it is difficult for us to realize what its final accomplishment means, but I think the limited use which has already been made on part of the water opportunities by the steel barges that have plied and are still plying them demonstrate how valuable a line of communication this waterway affords to the sea at Mobile; and it would seem that some marked advertisement to the world should be made of this fact, and something commemorative of this notable event should be done in a fit and suitable manner shortly after the opening of this work."

A theater costing \$30,000 has just been completed at El Paso, Tex.

Textiles in One North Carolina County

By LENA RIVERS SMYTH.

In Gaston county, North Carolina, are 65 cotton mills, with 596,836 spindles and 4248 looms, most of the mills being yarn mills. These mills consume about 150,000 bales of cotton annually and pay something like \$2,000,000 yearly to employees.

The era of the first mills in the county lasted from 1848 to 1888, during which time it was merely taking root. Only six mills were built in that period. The business was badly crippled by the war. Cotton which supplied the mills was hauled through the country from Virginia and the Carolinas, and much of it was confiscated.

While the mills erected in the first era had made a success in a small way, none of them had loomed very large in the industry or taken very rapid strides. All of them were making the coarse goods. But in 1888 a man came forward out of the file of the mill workers who took leadership, surprised his own section and became known as one of the greatest mill men of the South. This man was George Alexander Gray, one of the most successful cotton-mill builders and operators the South has produced, a man who fearlessly entered a new field and blazed a path that has become a thoroughfare. He was the man who, with two competent associates, the late Capt. J. D. Moore and Capt. R. C. C. Love, built the first mill of Gastonia and started that town on its record. He started the mills on fine goods, being the pioneer in that branch of the industry, and taught the men of his section to have more confidence in themselves and their resources. He was the promoter and builder of some of the most successful mills in the county today, and at the time of his death in 1912 he had built 21 cotton mills, which are scattered over North and South Carolina, Georgia, Alabama and Tennessee.

The story of Mr. Gray is one of interest, and is somewhat similar to the story of the lives of two other leading figures of the South—D. E. Converse, who was a pioneer cotton mill man of South Carolina, and whose crowning work was the building and endowment of Converse College in Spartanburg, S. C., and D. A. Tompkins, who was the leading spirit in the promotion

by picking burrs out of wool. The family remained at the mill for four years, when they moved to the old Pinhook mill, where young Gray arose to the position of superintendent and built the Lawrence mill when he was only 20 years old. As a rule accidents are considered a misfortune, but George A. Gray always considered the accident in the mill that nearly cost him his



CALEB J. LINEBURGER,

Builder of the first cotton mill of Gaston county, North Carolina, in 1848, and one among the earlier mills of the South. Mr. Lineburger died last April at the age of 97 years.

arm as a turning-point in his road to success, for it was during the healing process that he attended his first school and learned to read and write. He stayed in school during his whole career eight months and four days, but he was a student for life, and at the time of his death he was considered one of the best-posted men on textile industries in the South and a man of rare literary tastes. He knew the cotton-mill business in all its phases, and so well was his ear trained by the practical training which he had received when a boy that he could detect in an instant the least defect in the running of the machinery while the average man was deaf to the sound.

In 1888 Mr. Gray went to Gastonia, where he invested the few thousand dollars that he had saved in with others and built the first mill of that town, which is known as the "Old Mill." Associated with Mr. Gray were two competent men, Capt. J. D. Moore and Capt. R. C. G. Love, the three of them often being referred to by the other mill men of the county today as the three pioneers. From then on the cotton-mill business made leaps and bounds in Gaston county, there having been erected in the county within the past 25 years over 60 mills, and 17 of them being in the town of Gastonia. Captain Moore and Captain Love, both being men of unusual ability, assisted very materially in erection of the mills.

The cotton mills of Gaston county, even with the rapid erection, have not had an unusual growth. Most of them have been started on a small basis with 2000 or 3000 spindles, and from these small structures they grow into larger mills. With the exception of the Loray mill, which has 57,000 spindles and 1600 looms, the mills are comparatively small. The industry is well divided, there being no monopolies; for out of the 65 mills, there are 32 corporations. There are 18 mill towns scattered over the county, and these put a smoke-stack within sight of every traveler.

Another thing of peculiar interest about the Gaston county cotton-mill industry is the fact that there is very little outside capital, and only a small amount, compared to the whole, of Northern capital invested in

the mills. This is largely due to the unusual amount of co-operation spirit found among the business men and the citizens. When a man wants to build a mill in the county he usually interests a number of his friends, and they start a building as big as their money will allow and make it grow larger as the business succeeds.

Still another interesting thing along the same topic is that the most of the men who have built the Gaston county mills and those at the head of them are natives of the county. One of the secrets of their success is that no man is ever put at the head of a mill until he has shown his ability to handle a successful business. When a man goes in to operate a mill he must not only risk his capital, but his whole and best efforts and reputation go with it. The result of this has been the making of a score or more of some of the most successful mill men of the South. Among some of the successful cotton mill men of the county, and one who rose from the ranks, so to speak, is Mr. J. O. White of Gastonia.

Mr. J. O. White has behind him 27 years of practical experience of mill work, in which he started on one of the first rounds, and has reached the position of president of three cotton mills and general manager of six by steady climbing. His life is representative of many other successful cotton mill men of the South who have reached the higher positions by working themselves up. He is a native of Gaston county, and was born and reared on a farm. At the age of 18 years he entered a cotton mill and was engaged as a sweeper boy and man of all work. His life as a laborer in the mills in which he worked was a series of steady promotions until he had filled every position in the mill, learning each branch of the industry, which has well qualified him to fill the position he now holds. When he first came to Gastonia several years ago he worked at the Old Mill under the leadership of Mr. George A. Gray and Capt. J. D. Moore, both of whom were his lifelong friends. He resigned the position as card grinder and night superintendent to take the superintendency of a mill in Shelby, but soon returned to take charge of the Modena mill, which was built by Captain Moore. After this Captain Moore built three other mills, and Mr. White was given the general superintendency of all of them. After the death of Captain Moore in 1906 Mr. White was made president of three mills and given the general management of all six of what is now called the White chain



JOHN CALVIN GREER LOVE.

One of the successful pioneer cotton-mill men of Gaston county.

of the textile industry of North Carolina. All three of these kings in the cotton-mill industry in the South began life as boys in the mill.

George A. Gray was born September 21, 1851, on a small farm in Mecklenburg county. He was one of several children of parents who were poor, and when he was only a boy they moved to the Mountain Island mill in Gaston county. It was at this mill, at the age of eight years, that George A. Gray began his wonderful industrial career and earning the sum of 10 cents a day



J. O. WHITE.

A man who has filled every position to be held in a cotton mill—from sweeper boy to president.

of mills. Mr. White is a man of recognized ability in the pursuit of his trade, and is active and energetic in all things which mean the promotion of the cotton-mill industry and the people connected with it. What has been said of him might be said of nearly all of the men at the head of the successful mills of the county with the exception that he is the only one of the younger men to have worked to such an exalted position from a humble position in the mill.

Gastonia, the county-seat, which is now a bustling town of 12,000 people, half of whom are employed in

the 17 cotton mills of the city, was a mere country village of a couple of hundred people or more when the first cotton mill was built. Like all the other 18 cotton-mill towns and sections in the county, cotton mills have made it. The town enjoys all the privileges and conveniences of larger cities, having a system of water-works, electric lights, sewerage and gas, with a street-car system operating from one end of town to the other. It is on the main line of the Southern Railway, and a year or so ago the railway company built an adequate station suitable to the needs of the public. A few years ago Gastonia took the courthouse from Dallas by building one among the finest structures in the State at that time. With a city hospital, a handsome new hotel and the beginning of a \$65,000 postoffice building and the rebuilding of a graded school which will cost when completed somewhere around \$80,000, Gastonia is a town that has begun to put on city airs. About a year ago a Chamber of Commerce was established, which is an active organization in the promotion of industries.

One among the most up-to-date villages in the State is Bessemer City, which lays claim to nothing more than four cotton mills as the reason for its existence. In addition to electric lights, water and sewerage, it has any town in the State beat when it comes to paved streets, for there is not a single house with the exception of one or two on the top of the small mountain on the western boundary where the people cannot go to and from their work on paved streets. The same is true concerning the distance between the homes and the school and churches. One of the most evident pieces of prosperity is the handsome graded school building which was erected last year at a cost of \$27,000. Belmont is another mill town that has been rescued by the mills; one of the finest yarn mills in the South is now being located within a few yards of the site of an old stillhouse. Cherryville, which is in the western edge of the county and approaching the foothills of the mountains, has done much with its mills in finding employment for people.

Just what the cotton mills have done for the farms and farmers of the South would be inestimable, and especially is this strongly brought out in Gaston county. Farming land that could have been bought 15 or 20 years ago from \$5 to \$20 an acre, and some of it that could not have been disposed of other than by gift ranges in price today from \$25 to \$100 and \$200 an acre. There are 135 miles of macadam and sand-clay roads through the county.

Gaston county was never the home of large planters and wealthy slaveholders as were other sections of the South, although there were a few substantial farmers who owned a few negroes. The county was pretty well divided into small farms, many of which were heavily mortgaged, as the people were in a rather impoverished condition, and especially so after the Civil War. The tenant farmer was the deepest sufferer. The plan of one poor man working for another poor man was not one to insure even the needed comforts and conveniences, nor to obtain the best results that labor might achieve. The country homes at that time for the tenant and poor farmer were usually the small one or two-room houses, many of the tenants occupying the crude log cabins of the pioneers. And among the country homes of the better class there were none of the colonial mansions, but just the plain, comfortable country home, without any of the present-day adornments and conveniences in many of the country homes of the well-to-do.

A trip through the country now bespeaks the change. The neat white farmhouses, good barns and stables and the high cultivation of the land is a contrast over the same country 15 or 20 years ago. The farmers are beginning to use the improved appliances, cultivating their land better and getting better results. With the settlement of 18 cotton mills in different sections of the county and thousands of people employed in the mills as consumers who spend weekly a vast amount for supplies, the farmers are finding ready and easy markets for their surplus produce, and the demand by the mills for more cotton has increased the growing of cotton. In this, however, Gaston county has not made a record as might be expected, as only about 15,000 bales are made yearly. The farmers as a rule produce a diversified crop, which insures a more even prosperity than if they depended entirely upon the cotton crop. But in the growing of cotton the farmers have made great strides, for several years ago a farmer thought he was doing well to make a bale to two acres of land. Now the most progressive planters make their land average a bale to

the acre, while one or two of the most scientific farmers make two bales to the acre on portions of their land. However, the county has the record of growing more long-staple cotton than any other section in the State.

The Lewis long-staple cotton was originated by a Gaston county farmer, and this is the variety planted largely by the farmers. This cotton finds a market in the Gaston county mills, and is made into the fine yarns and fancy weaves. The propagation or discovery of this cotton was made by E. Perry Lewis, who felt the demand for a longer staple than the local short cotton made by the farmers. The fine yarn mills were paying a fancy price for long staples grown farther South. This seemed like sending money too far from home when it might be made by the Gaston farmers, and this caused Mr. Lewis to begin an experiment. Just how the cotton originated its history is not really clear. Eight years ago Mr. Lewis planted some seed, which he had selected, in a row to which he gave special attention. There was one hill that showed superiority, and this was cultivated with care. At the end of the year he had a fine silky cotton that measured an inch and a quarter staple hanging from a five-lock boll.

Appraised valuation of real estate and personal property increased from \$2,932,798 in 1883 to \$14,500,000 in 1914.

Four railroads pass through the county, the Seaboard going east and west; the Southern, north and south; the Carolina & Northwestern, southeast and northwest, and the Piedmont & Northern lines, operating an electric line from Gastonia to Charlotte and giving a car practically every hour between the two points. So well is the county traversed with railroads that there is not a farmhouse in the county more than six miles from a railroad station.

About a year ago the Cocker Machine & Foundry Co., a first textile machine shop, was erected. It is specializing on warping machinery, although the plant is thoroughly equipped to make or repair any form of cotton-mill machinery. The shop is under the management of Mr. George B. Cocker, who has had 21 years' experience as a machinist with the Globe Machine Shop of Philadelphia.

The schools have improved with times. In 12 years the value of school property of the county has grown from \$13,000 to over \$100,000, with new school buildings taking the place of old ones in several sections of the county. The schools of Gaston today are all equipped with comfortable desks for the children, and some of the schools, in fact the most of them, are furnished with all the modern comforts, and in the towns all the conveniences have been added. On account of the scattered schoolhouses several years ago, many of the better class of farmers employed teachers and ran schools by private subscription. With the coming of the mills and other progress among the people, better schoolhouses took the places of the old ones. In all sections of the State where mills are located better schoolhouses are built than those previously used, and some of the country mills defray the expense of extending the school to a six or eight months' term. Last year the schools of Gaston county made the high mark of an average attendance of 80 per cent., the average of the towns and mill villages being above the country districts. This is an observation of Mr. Frank P. Hall, the county superintendent of schools of Gaston county, and who has been a strong factor in bringing the schools up to their present high standard. Mr. Hall states that in all sections of the country, in both rural sections and in the towns, the average attendance makes a decided increase when a new building is erected.

Another high rank for Gaston county is the number of banks in the county, there being 10 within its limits, with three in King's Mountain, which is a cotton-mill town situated half in Gaston and half in Cleveland counties. Every town in the county is made up largely, and sometimes almost exclusively, of cotton-mill people, and it is the progressive element that is helping to support the 13 banks in the eight towns in which they are located. Still there are quite a number of cotton-mill people who are saving, but who have never taken much of a fancy for banks. In order to encourage them to save, some of the mills offer to take deposits and give the legal rate of interest. In some of the towns the mill men have organized building and loan associations and have interested some of the people in these. While it is true that the mill people as a rule are rather lavish with their earnings, spending it for what pleases their

fancy, there are some who are saving. In every mill section there can be found several families who have bought homes, although the low price of rent charged by the mills for the cottages is not much of an inducement to buy a home unless the person has a desire for a better home than the mill cottage affords. The cottages in mill sections usually rent from 10 to 25 cents a week for each room, and in some of the older sections, where the houses are not as good as the ones built by the newer mills, they are given free.

The cotton-mill people of the South have been a badly-abused lot, and unjustly so, for the only notice ever given to them has mostly been stories wherein the worst conditions of a section have been held up, and these, to a certain extent, have been typified of the entire textile workers. So far the Southern mills have the native help. The cotton mills have been a blessing to the poorer element that has found remunerative employment, while the mills have been very fortunate in securing help from the farms and mountains which is fast becoming more and more skilled in the arts of the trade.

In Gaston county the people have made a very marked improvement, for the employment of thousands of people, some of whom used to be the idlers who played havoc with the peace of the community when the still-houses outnumbered the mills, has brought about wonderful changes. There is not a more steady set of mill operatives, taken as a whole, in the State than in Gaston county.

The cotton-mill people coming under my personal observation for the past three years, I have had an opportunity to learn them in their social, religious and everyday lives. They are still the plain simple folk of the country born, despising the pretensions of society, and having lived among themselves they do not feel dependent upon the outside world for anything. Consequently, one will find them independent and proud and thoroughly without deceit, as they do not mind showing pointedly if a thing or person does not meet with their approval. If one does not understand human nature enough to meet and mix with them they are irreproachable to such a person, but once they like you, they are loyal friends as long as you prove worthy of their friendship.

One thing which speaks well for the people of Gaston county is that fully one-half of the population of the county are people connected with the cotton-mill industry, and out of 22 inmates in the county home, only two people are from a mill section, and yet, as a whole, they came from the poorest people of the country.

On an average, wages paid to cotton-mill operatives have almost doubled what they were 12 or 15 years ago, and while the cost of living has increased along certain lines it has diminished in many others. The mills, however, have helped to bring down the cost of living to the operatives in many respects by furnishing houses and gardens for a small amount of rent. These in many of the more progressive mill villages include water, electric lights, good streets, and in a few sections sewerage connections. The conditions of the mill operatives today are much superior to that of several years ago. In the town of Gastonia as well as two or three other sections of North Carolina gas mains are laid in some of the mill villages and the people are using gas for cooking purposes. When the mills first started doffer boys who work about one-third of the time were paid from 10 to 25 cents a day, while these boys today, who play ball and other rollicksome games on the mill grounds when not at work, get from 65 cents to \$1 a day. Spinners who used to get from 50 to 65 cents a day can earn from 90 cents to \$1.50 a day, according to the number of spindles she can manage. The wages paid to weavers has also materially increased, the average weaver today earning \$10 a week. The prices range from \$7 to \$15 a week, according to the skill in weaving perfect cloth and the number of looms run. The wages paid to cotton-mill operatives are better than that of other vocations which require more skill and ability. The fact that an untrained man or woman can go into a mill and earn a comfortable living has been one of the reasons why the uneducated classes have flocked to the mills and why these numbers, which make a deeper impression than if scattered over the country, have brought criticism to the mills. However, the schools built by the mills have afforded better advantages for the children, and the children reared in cotton-mill villages today are receiving an education much superior to that of their parents. In my visits among the mills of the State I have not

seen a child who was old enough who had not been to school.

Within a radius of 100 miles of Gastonia over 425 of the 768 cotton mills of the South are located. The greater portion of the industries have sprung up within the past 15 or 20 years. It has been in the Piedmont section of the two Carolinas where the greatest number of cotton mills have been located, and this is possibly due to the amount of water-power found along the streams that flow from the mountainous section, and also to the splendid help that has developed out of the poorer class of tenants who have gone to the mills.

The most of the mills of both North and South Carolina are now getting power from the Southern Power Co., which is fed by the water-powers in both North and South Carolina, and which is another industry developed by the cotton mills of the South. This company was promoted a few years ago by the Duke brothers of Durham, N. C., Mr. S. C. Lee of Charlotte, N. C., and others. In addition to furnishing power for the mills and lights for the towns through which the lines pass, the company has laid plans for building an electric railway to connect nearly all of the principal mill sections of North and South Carolina. Part of this line has been built in both States, and is now in operation, the link between Gastonia and Charlotte, N. C., having been the first to be completed.

MILLIONS FOR CONSTRUCTION.

Pennsylvania Railroad Sells Another Bond Issue for 1915 Financing.

The Pennsylvania Railroad Co. will have this year for construction and general requirements about \$25,000,000, this being reported in connection with published statements of the company's sale of \$65,000,000 of general mortgage 4½ per cent. bonds of Kuhn, Loeb & Co. This bond sale is in addition to \$49,000,000 sold in January, and this makes a total of \$114,000,000 of financing for 1915, most of which will be needed to meet the \$86,827,000 of 3½ per cent. convertible bonds that mature October 1 next. Particulars concerning the construction to be done have not been announced.

Fertilizer Importations in 1914.

The shortage of potash salts in the United States in 1914 was further accentuated by the German embargo on export at the end of January, 1915. In spite of the interruptions to the normal trade in potash salts, the imports of salts proper in 1914 amounted to 485,818,459 pounds, valued at \$8,743,973, according to a statement by W. C. Phalen, just made public by the United States Geological Survey. These figures represent a decrease in quantity and value amounting to 21 per cent. and 19 per cent., respectively, compared with 1913. These figures, however, do not represent the total imports of potash salts. There should be added the quantity and value of kainite and manure salts imported, amounting in 1914 to 482,867 tons, valued at \$3,397,590, making a total importation during the year valued at \$12,141,563, compared with \$15,241,152 in 1913—a decrease amounting to \$3,099,589, or approximately 20 per cent.

Potash salts constitute only one of several fertilizers imported. Bone dust, calcium cyanamid or lime nitrogen, guano, basic slag and other materials used for manure are also brought in. The total quantity of these materials, including kainite and manure salts, imported in 1914 was 761,896 long tons, valued at \$9,921,439. In addition to the above importations, sodium nitrate valued at \$15,204,539 came into this country from foreign lands, thus bringing the total value of imports as designated above up to \$33,869,951.

For a \$1,260,000 Contract.

D. L. Taylor & Co., Medina, N. Y., have established construction offices at Morehead City, N. C., preparatory to proceeding with their Government contract for the breakwater at Cape Lookout. A granite quarry is being developed at Neverson, N. C., and a dock will be built at Morehead City to transfer stone from railroad cars to scows. The firm expects to begin placing stone

by June 1, its contract including breakwater and shore connection to the extent of the authorized funds, \$1,260,000. The breakwater will be 7000 feet long, deposited in water up to 42 feet deep; specifications estimate 1,221,700 tons stone for breakwater and 8300 tons for shore connection. Contract has been approved at about \$7000 to Rickards Dredging Co., Philadelphia, for dredging in waterway Pamlico Sounds to Beaufort Inlet, in harbor at Beaufort, and in waterway connecting Core Sounds and Beaufort harbor, for United States; also widening embankment along south side Norfolk Southern Railroad at Morehead City for Taylor & Co. The Harris Granite Quarry Co., Salisbury, N. C., is developing the quarry at Neverson and has Government contract to furnish 30 carloads (40 tons each) stone daily for four years. It has purchased 60 acres for quarry and plant, ordered 10 large derricks and is building dwellings for 100 workmen.

The Rock Island Receivership.

The United States District Court at Chicago has approved the proposals of the receivers of the Chicago, Rock Island & Pacific Railway Co. to pay interest matured May 1 on all obligations, including equipment trust notes and Choctaw serial bonds; postponement of payments on principal of equipment notes until May 31, with 4½ per cent. interest to that date; postponement of decision to continue payment of interest on purchase of Trinity & Brazos Valley Railway (owned in connection with the Colorado & Southern) until the security-holders and others interested attain a conclusion; the sale of \$1,494,000 of 5 per cent. one-year receivers' certificates at par to take up an equal amount of Rock Island, Series M, gold bonds maturing May 1, this issue to be for the purpose of preserving for the Rock Island's estate the Choctaw Railroad.

Chattanooga's Municipal Audit.

In transmitting to the Board of Commissioners of Chattanooga, Tenn., a complete audit of the books of record of the municipality from October 1, 1914, to March 31, 1915, Mayor T. C. Thompson shows that assessed valuations at present in the city are \$35,302,803 and the total bonded indebtedness \$3,517,104.09, including every bond outstanding. General conditions in the city are good, the schools in excellent shape, parks and playgrounds are a credit to the community, police and fire department in excellent condition save for the need of greater equipment, and citizens are co-operating in sanitary matters.

American Iron and Steel Institute Directors.

[Special Dispatch to Manufacturers Record.]

New York, N. Y., May 5.

At the annual meeting Monday of the American Iron and Steel Institute, James A. Burden, Troy, N. Y., president of the Burden Iron Co., was elected a director of the Institute to succeed Ferdinand Roebing, who was not a candidate for re-election. Messrs. Campbell, Mahen, Drummond, Rogers, Welborn and Witherbee were re-elected directors.

Louisiana Highways.

It is expected that by the end of this year Louisiana will have 550 miles of improved highways constructed at a cost of nearly \$2,000,000. This mileage is part of a system which is planned to provide 5000 miles of main thoroughfares connecting every parish in the State with about 20,000 miles of lateral and intersecting roads.

Dr. D. R. Hill, commissioner of health and sanitation at Joplin, Mo., is anxious for a bond issue to provide an incinerating plant for the city.

The plant of the Norfolk Smelting Co., West Norfolk, Va., is now smelting copper ore brought from Cuba, Missouri, Illinois and other States. It employs 300 men.

Good Roads and Streets

SOUTHERN HIGHWAY ACTIVITIES.

Details of Week's Progress in Improvements in City and Country.

Further details of road and street undertakings and bond issues mentioned below are given under the headings Construction Department and New Securities, published elsewhere in this issue.

The MANUFACTURERS RECORD invites from its readers information about road and street work projected or under way, photographs of good roads and discussions of matters pertaining to the betterment of the highways of the South.

Bonds Voted.

Convent, La.—St. James parish voted \$200,000 bonds to improve and construct gravel roads.

Thibodaux, La.—LaFourche Parish Road District No. 2 voted \$80,000 bonds to construct 20 miles hard-surface road.

Bonds to Be Voted.

Culpeper, Va.—Culpeper county, Cedar Mountain District, will vote May 29 on \$100,000 bonds for macadam roads.

Quitman, Ga.—Books county votes May 29 on \$400,000 bonds to construct roads.

Winter Haven, Fla.—City votes today on \$9000 to \$10,000 bonds to hard-surface streets; total expenditure about \$18,000.

Contracts Awarded.

Abbeville, La.—Vermilion parish awarded contract to construct 9 miles of road; \$50,000 available.

Baltimore, Md.—State awarded \$65,712.34 contracts for road improvements.

Baltimore, Md.—City awarded \$38,426 paving contract.

Birmingham, Ala.—City awarded contracts for street paving to cost \$14,875.

Clarksville, Tenn.—Montgomery county awarded contract to construct gravel-surface roads; 8300 cubic yards of earth; 2500 cubic yards of gravel; \$20,000 available.

Dallas, Tex.—City awarded \$28,143 contracts for street paving.

Dermott, Ark.—City awarded contract to construct sidewalks, curb and gutter; \$30,000 available.

Gulfport, Fla.—City awarded contract for 19,000 square feet of pavement.

Rockford, Ala.—Coosa county awarded contract to grade, drain and surface with topsoil 2½ miles of road; expenditure \$4616.26.

St. Joseph, Mo.—City awarded \$22,006.95 contracts for street paving.

Contracts to Be Awarded.

Angleton, Tex.—Brazoria County Road Dist No. 6 will construct about 30 miles of hard-surfaced road.

Birmingham, Ala.—City receives bids until May 4 to construct macadam paving, curb and gutter and sidewalks; estimated cost \$5000.

Bryson City, N. C.—Swain county receives bids until May 10 to grade about 8 miles of highway.

Clarksburg, W. Va.—Harrison county has \$80,000 available to construct hard-surface roads.

Corinth, Miss.—City will pave 13 blocks in business section.

Evergreen, Ala.—Conecuh county receives bids until May 24 to grade, drain and surface with sand-clay portion of road; expenditure \$11,158.50.

Haynesville, Ala.—Lowndes county receives bids until May 31 to grade, drain and surface with gravel portion of road; expenditure \$4116.26.

Montgomery, Ala.—Montgomery county receives bids until May 10 to gravel about 2 miles of road.

New Castle, Ky.—Henry County Fiscal Court ordered reconstruction of 3¼ miles of road; cost \$14,000.

New Cumberland, W. Va.—Hancock county will expend about \$40,000 on brick road construction.

Pine Bluff, Ark.—Jefferson County Road Improvement District No. 7 will construct 18 miles of road at cost of about \$100,000.

Pocahontas, Ark.—Randolph County Road Improvement District No. 1 will construct 8 miles of road. St. Marys, W. Va.—Pleasant county, Washington District, will expend \$30,000 completing concrete roads. Wheeling, W. Va.—Ohio county will expend \$105,000 on resurfacing and constructing new roads.

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

GEORGIA RAILROAD DEAL PENDING.

Savannah & Northwestern to Be Acquired for a New Route from Atlanta to the Sea.

Negotiations are practically closed, according to announcements made at Savannah, for the sale of the Savannah & Northwestern Railroad to the Georgia Railroad & Banking Co., owner of the Georgia Railroad which is leased to the Atlantic Coast Line and the Louisville & Nashville railroads, so that the conclusion of the deal, which is expected at a meeting of the Georgia Railroad stockholders May 12, would practically make the acquired railroad part of those systems and ultimately provide a new route from Savannah via Atlanta to Birmingham, Chattanooga and other points west.

The Savannah & Northwestern Railroad is 108½ miles long from Savannah via Springfield, Sylvania and Waynesboro to Saint Clair, Ga., and the construction of an extension of not more than 30 miles would connect it with the Georgia Railroad at either Warrenton or Camak, Ga., as might be considered expedient. There has recently been considered a plan to extend the line into Augusta, but that was apparently without reference to the sale. There were also plans to extend to Washington, Ga., some time ago. The line was built by George M. Brinson of Springfield, Ga., whose interests were acquired a year or two ago by the present owners. The president is John H. Hunter of Savannah. The directors are James Imbrie, John F. Wallace, W. G. Law, Jr., and R. Billings of New York city; John H. Hunter, Mills B. Lane, R. M. Hitch, T. P. Goodbody, G. F. Armstrong, H. D. Stevens and E. M. Frank of Savannah; C. W. Skinner of Waynesboro, J. H. Evans of Sylvania and E. T. Comer of Millhaven, Ga.

The principal advantage of this railroad to the Georgia Railroad and its lessees would be in the short route it would provide between Savannah and Atlanta via Camak, provided that the extension of the Savannah & Northwestern to that point is constructed. Such a route would be about 263 miles long, thus 124 miles Atlanta to Camak, 30 miles Camak to Saint Clair, 109 miles Saint Clair to Savannah. Moreover, if the contemplated extension from Waynesboro to Augusta was built, it would provide a route from Savannah to Spartanburg, S. C., where connection could be made with the Clinchfield Railway and a share of its coal traffic to the seacoast might thus be obtained for the Atlantic Coast Line and its leased roads.

Ozarks Railway to Start Work.

[Special Correspondence Manufacturers Record.]

Mountain Home, Ark., May 1.

Bids will be opened within the next 10 days for the construction of the first 10 miles of a road that will be constructed by the Ozarks Railway Co. from Springfield, Mo., to Little Rock, Ark. Construction will start from a point on the white River division of the Iron Mountain & Southern Railroad, 20 miles south of Cotter, Ark., and will be pushed north to Springfield, a distance of 110 miles. When this stretch is completed work will be started south to Little Rock.

The promoter of this road is K. V. Loba of Yakima, Wash., and the company is financed largely by Northwestern capital. When completed the line will be 250 miles long, will not parallel any other road, and will open up one of the few undeveloped territories left in the Middle West. In Missouri it will run through

the counties of Greene, Christian, Douglas and Ozark; in Arkansas, through Baxter, Marion, Searcy, Van Buren, Conway, Faulkner and Pulaski. It will traverse new territory for the entire distance.

A total of 6,000,000 acres will be served by the road when it is completed. It will tap the Buffalo and Baxter county mining districts; will run a large part of the way through the Ozark National Forest and give transportation for a very large virgin stand of white oak timber.

The main office of the company is at Springfield, Mo. A local office is maintained at Mountain Home, from which point construction work will be overseen.

TOM SHIRAS.

"Cotton Belt" Terminal at Fort Worth.

The St. Louis Southwestern Railway Co., or "Cotton Belt Route," has completed and put in service its new freight yards and terminal at Fort Worth, Tex. They front on 5th and Terry streets, and cost nearly \$1,000,000. A feature of the construction is a huge retaining wall of concrete 24 feet thick at the bottom and 9 feet thick at the top. It is 825 feet long, and ranges in height from 9 feet to 42 feet. Large buttresses reinforce it at intervals of 10 feet on each side of the wall, which retains an immense fill of earth, the weight of which on the inside adds to its effectiveness. These buttresses are 18 inches thick, and reach practically to the top.

The yards and buildings occupy a tract of land of about 12 acres. The freight station is 460 feet long and 34 feet wide, and the office building at the head of the platform is of concrete and brick and is two stories in height. The roof is of tile. There are 27 steel doors in the depot through which freight is received and delivered. There are three scales. All the flooring is creosoted. There are two house tracks and three team tracks. The approach to the yards is over a trestle 1800 feet long, and from the trestle to the yards is double-tracked. About 600,000 cubic yards of earth were handled in preparing the tracks and yards, a portion of which are over what was formerly a valley about 40 feet deep.

New Equipment, Etc.

Alabama Power Co., Huntsville, Ala., has ordered 4 all-steel street cars from the Southern Car Co., High Point, N. C.

Norfolk & Western Railway will invite bids, according to a report from Roanoke, Va., where its headquarters are located, for all-steel equipment as follows: 10 passenger cars, 12 baggage and express cars and 2 mail cars.

Chicago, Rock Island & Pacific Railway is reported in the market for 30,000 tons of rails.

Fort Worth & Denver City Railway will purchase 10 Mikado type locomotives, 1200 box cars, 300 stock cars and 200 coal cars.

Kansas City Southern Railway has ordered 6000 tons of rails from the Algoma Steel Corporation, Ltd., Sault Ste. Marie, Ontario, Canada.

Jacksonville Port Commission has received five carloads of steel rails for its new dock railway. They were rolled by the Maryland Steel Co., Sparrows Point, Md.

Western Maryland Railway is reported in the market for 1000 steel coal cars.

Pennsylvania Lines West have ordered 150 steel underframes from the Ralston Steel Car Co., Columbus, O., and other builders.

Southern Railway's Earnings.

The Southern Railway Co. reports for March gross revenues \$5,290,249, decrease as compared with the same month of last year \$774,348; operating expenses, taxes and uncollectible railway revenue \$4,036,977, decrease \$708,824; operating income \$1,253,272, decrease \$65,524. In addition to the operating expenses, etc., the company spent during March for improvements to roadway and structures \$743,166, an increase of \$498,566 as compared with March of last year.

The statement for the nine months of the company's year to March 31 shows gross revenues \$47,326,234, decrease as compared with the corresponding period of last year \$6,769,378; operating expenses, taxes and un-

collectible railway revenue \$37,703,293, decrease \$3,006,449; operating income \$9,622,941, decrease \$3,762,929. In addition to operating expenses, etc., the company spent during the nine months for improvements to roadway and structures \$6,951,847, increase as compared with the same period of last year \$4,853,687.

In the foregoing statements such charges as hire of equipment, rentals of leased lines, terminals, etc., and interest on bonds are not taken into account, but they will be charged against the operating income.

Parallel Roads Used as Double Track.

Beginning on Tuesday, May 4, the tracks of the Southern Railway and of the Seaboard Air Line Railway between Raleigh and Cary, N. C., seven miles are being used as double track. As the two tracks are parallel for the entire distance they were easily converted into a joint double-track railroad. Rearrangements of track connections were made at Raleigh and an interlocking plant already in service was enlarged to take care of the additional switches and signals. Ultimately it is expected to have six passing tracks, three eastbound and three westbound, located in pairs at each end of the stretch and about midway. Three of these tracks are now in service. It is also intended to install an interlocking plant at Cary, but on account of business conditions the additional track and signal work will not be done at this time. Trains moving over this joint double track will be signalled by telegraphic block.

Baltimore & Ohio Provides Financing.

The Baltimore & Ohio Railroad Co. has sold to Kuhn, Loeb & Co. and Speyer & Co. of New York \$40,000,000 of 4½ per cent. gold notes, which were, in turn, sold by them to the public by subscription within less than one business day. The proceeds of the securities will be mainly devoted to taking up the \$35,000,000 of notes of the company which mature June 1, and the remainder will be employed for improvements, etc.

Among the improvements contemplated is the erection of an additional coal pier at Curtis Bay near Baltimore and some new equipment, principally freight cars, has been ordered.

Santa Fe's Texas Budget.

The budget of the Gulf, Colorado & Santa Fe Railway Co. provides for expenditures in Texas this year of \$659,700, of which \$221,630 will be for removing old rails and putting in new and heavier ones; \$180,780 for other track material and improvements; \$48,100 for stations and office buildings; \$22,600 for shops and engine-houses, the remainder being for various other improvements.

Further Extension Awarded.

The Seaboard Air Line, according to a report from Bartow, Fla., has let a contract to A. F. Langford to build from Baynard, the present terminus, an extension of its Lake Wales branch 16 miles, which will take the line to a point within a few miles of Lake Kissimmee. It was only recently that the extension was opened for service.

Railroad Notes.

A report from Hamlet, N. C., says that President W. R. Bonsal of the Carolina, Atlantic & Western Railway has announced that May 1 it began operating the Georgetown & Western Railway, recently acquired.

The Bamberg, Ehrhardt & Walterboro Railroad, recently completed from Ehrhardt to Bamberg, S. C., is now being operated by the Atlantic Coast Line, with which it connects.

A. S. Edmonds has been appointed traffic manager of the Chesapeake Steamship Co. at Baltimore, succeeding W. H. Tayloe, who recently resigned to become passenger traffic manager of the Southern Railway at Washington, D. C.

TEXTILES

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the MANUFACTURERS RECORD. We shall be glad to have such matters at all times, and also to have any general discussion relating

Utilization of Cotton Waste.

In a paper before the Boston meeting of the National Association of Cotton Manufacturers on the utilization of cotton waste by German and Austrian methods, Frank Nasmith, consulting textile engineer of Manchester, England, said:

"In practically every manufacturing process waste is produced, which in a great many cases is put to some definite profitable use. In the cotton spinning industry, although a certain amount of the waste produced is mixed with the fresh cotton and combined in the yarns forming the staple product of the mill, there is always a comparatively large amount which the spinner cannot use in this way and which he sells to the waste merchant or waste spinner. Recently a very varied, and in many ways remarkable collection of fabric samples, made in Germany and Austria, was displayed in London and Manchester, England, a great number of which were woven from yarn spun from cotton waste. Fabrics composed of cotton and wool waste, cotton waste and fresh raw cotton of short staples and other mixtures were also shown, but the point to be emphasized is that out of waste material excellent, tasteful and marketable fabrics were produced. The range of fabrics shown comprised cotton blankets, printed flannelettes, sponge cloths, molletons, printed cretonnes, voiles, suitings, etc., many of them being most delicately printed and finished. To those accustomed to the lower class waste trade these fabrics were a revelation and they demonstrated very clearly the high position the German and Austrian manufacturers have attained. Although these fabrics are in many cases manufactured to act as substitutes for all cotton or all wool material, there is a large market for them which at the moment cannot be completely supplied owing to the stoppage of exportations from Germany and Austria.

"Before going further it will be necessary to draw a distinct line between hard and soft waste. In Lancashire the former class of waste is thoroughly understood and its treatment has been developed to produce such good results that foreign competition is not felt. As a matter of fact, Germany exports hard waste to be treated in Lancashire, just as Lancashire exports soft waste to Germany. Hard waste, comprising chiefly cop bottoms, is dealt with by a range of machines comprising hard waste breaking machine, scutcher, breaker carding engine, derby doubler, finisher card with condenser, and mule or ring frame. It is not intended to say anything further about hard waste in the present paper, but to direct your attention firstly to the treatment of low quality soft waste—sweepings, droppings, cardfly, card strips, comber waste, etc., as employed in the German and Austrian mills. Whatever reason may be forthcoming in regard to the treatment or non-treatment of soft waste in England and the United States, the fact remains that in the past the Germans and Austrians have carried out experimental and research work until they have developed a very considerable and profitable industry. Their waste utilization industry has been brought to a high state of economical and productive effectiveness, and it is absolutely impossible for us to immediately compete with them in the production of the wide range of yarns and fabrics they turn out. Only after years of endeavor will it be possible to compete on equal terms, for one must recognize the value of specialized effort, and the knowledge that is the outcome of practical development. At the same time it is possible to immediately produce with machinery at our disposal certain ranges of yarns and fabrics hitherto produced in Germany and Austria and shipped to England and the United States. Many spinners in the United States must have been faced recently with the problem of the disposal of their waste, and no doubt stocks have accu-

mulated, while on the other hand there has probably been an outcry for yarns suitable for manufacturing into knit goods. Well, here is the raw material on the one hand and the market for the finished product on the other. The gap between is not a difficult one to bridge, and should the opportunity of bridging it be now seized there is every reason to believe that the reliance hitherto placed on exportation of cotton waste and importation of hosiery yarns will not again be necessary, besides which a new industry will be created. It must be recognized that the extreme cheapness of the material dealt with and the low-priced goods into which it is eventually manufactured make it imperative that the cost of the treatment should be small. In dealing with low soft waste made up into yarns for carpet backings, sponge cloths, cheap hosiery, candlewicks, and the like, if these are to be produced cheaply, then the output must be considerable, and bulk lots will have to be handled. Particularly is this the case in regard to black hosiery yarns, and in place of the comparatively small parcels usually dyed at one time, lots of 2200 pounds are commonly dealt with in Continental mills. The old objection to the trade as being an extremely dirty and dusty one has been largely removed by the introduction and employment of dust extraction devices which not only clear the atmosphere of the room, but also remove the dust from the various machines immediately after it is created.

"It is impossible to draw a comparison between the soft cotton waste industry of England or the United States, and the Continent, because in the latter case we have a highly developed specialized trade built up gradually over a number of years, and in the former up to the present we have only a small industry not to any great extent endeavoring to produce high class waste fabrics which will act as substitutes for the real article. On the Continent good raw material is often mixed with the waste material and cases of spinning Egyptian cotton on the waste principle to produce a certain result are well known. The writer is credibly informed that in Lancashire one firm for a number of years has adopted the same principle in relation to Sea Island cotton, but the custom is not common, and the point remains that on the Continent it is a common practice to mix waste with good raw material of short staple. The resultant yarn has naturally more life and will raise and finish better than the ordinary waste yarn. Quite a considerable market is open to the manufacturer who will lay himself out to compete with the Continental mills. It must be clearly understood that cost is important in the success or non-success of the undertaking, and in certain qualities it is only by treating the material in large quantities that the first costs can be kept at a figure at which competition is possible."

Relieving Dyestuffs Shortage.

The complete cessation in imports of chemicals, and especially of artificial dyestuffs, of German origin, threatens to be a cause of widespread disturbance to nearly all American textile branches and to many other lines of industry. Managers of works in every section of the country are struggling to adjust themselves to conditions that call in many instances for a complete revolution in processes of manufacture and in the character of output, with resultant dislocation in all relations with consumers.

The few domestic color factories are putting forth every effort to supply in part the lacking dyes. Capital is also being embarked in new undertakings, designed to produce some of the simpler staple coal-tar colors, for which there is a heavy demand.

In the midst of this hurried readjustment by manufacturing interest, textile and other, to meet the exigencies of what threatens to be a temporary "dyestuff famine," and the equally hurried effort to replace foreign dyes by American-made dyes, it is the desire of the National Bureau of Foreign and Domestic Commerce at Washington to lessen in every way feasible the severe strain to which all parties concerned are so suddenly subjected.

The bureau requests, therefore, that all consumers, in quantity, of foreign dyestuffs and chemicals in general, communicate promptly in detail the character and extent of their needs. Domestic manufactures of dyestuffs, and newly started undertakings to place upon the market dyestuffs, coal-tar crudes and intermediates, and chemicals in general, are likewise requested to sup-

ply information as to just what products they are able to supply.

A clearing-house for the mutual exchange of information between productive and consuming factors in this somewhat critical emergency, where time is an important element, is evidently needed. The Bureau of Foreign and Domestic Commerce will gladly fulfill this function.

Riverside & Dan River Co.

The South's largest cotton manufacturing establishment, the Riverside & Dan River Cotton Mills, Danville, Va., has published its statement of earnings for 1914, and the total amount is \$507,676. During 1914 the company expended \$1,380,202 to complete and equip Dan River Mill No. 4 and improve Riverside Mill, the amount named being in addition to ordinary maintenance. From this expenditure there was deducted for depreciation charge \$200,000. Dividends were paid at 6 per cent. on preferred stock and 10 per cent. on common. In 1914, \$1,000,000 preferred stock was sold at par. The annual statement of the corporation for the 12 months ending December 31, 1914, is as follows: Assets—Real estate and machinery, including both Riverside and Dan River plants, \$9,648,488.11; stock owned in other companies, \$90,000; cash, \$225,003.71; bills and accounts receivable, \$1,946,105.17; inventories, stock in process, cotton supplies, etc., \$1,614,572.01; total, \$13,644,169.

Textile Notes.

Zebulon (N. C.) Hosiery Mills, lately noted as increasing capital by \$20,000, will build a dyerom addition and install a bleaching plant.

Southern Mills Corporation, Oxford, Ala., is reported as to build a large plant at Newport News, Va. Its Oxford mill has 5000 ring spindles, 175 braiders, 25 cards, etc.

MINING

ZINC IN NORTH ARKANSAS.

Development in the Field Largely Stimulated Since the First of the Year.

[Special Correspondence Manufacturers Record.]

Mountain Home, Ark., May 3.

The high price of zinc ore that has been steadily maintained since the first of January has greatly stimulated the zinc mining industry in the North Arkansas field. Many new operators have started to work, and the first four months' production equals the entire production for the year of 1914. If no more operators start work than are working now, the production of last year will be tripled.

Operations are not centered in any one locality, but are well scattered over the entire field. On the north side of the field work now extends from Bergman, in Boone county, east through Marion county and into northwest Baxter. On the south side of the field work is general from the mouth of the Buffalo River to Gilbert, extending through Marion county and into Newton and Searcy counties.

New strikes of ore are reported every week, and some of the best properties have been opened up during the past 90 days that have ever been opened up in the field.

The big revival of the industry that seemed to come simultaneously with the high price of ore was engineered practically without capital. Most of the operations are working on leases, mining free or in the shape of carbonates and silicates. The mills in the field that are running are also nearly all leases, made to mining men of experience who are making a good production.

The Buffalo River district is producing more ore than any other district in the field. The Rush camp, at the mouth of the Rush Creek, is maintaining the highest production among the camps. Zinc, in Boone county, is second, and the Dodd City camp is third.

With the exception of the ore produced at Zinc, which has to be hauled from a radius of two miles, the rest of the ore has to be hauled from 5 to 13 miles to the shipping points. The shipping points are Bergman, Zinc,

Pyatt, Yellville and Flippin, on the White River division of the Iron Mountain & Southern, and Gilbert, on the North Arkansas.

Concentrating plants that are in operation are the Sure Pop, in the Water Creek camp; the Speer, in the Crooked Creek camp; the Philadelphia and Morning Star, in the Rush camp; the Bonanza, in the Cow Creek camp; the Monkey Hill, in the Kingdon Springs camp; the Iola, in the Dodd City camp; the Madison, Jack Pot, Gloria and Coker Hollow, in the Zinc camp.

The largest producers in the entire field are the Sure Pop, Philadelphia, Speer and Coker Hollow, all operated by the Fuller-Shepherd Mining Co.; the Morning Star, operated by Capt. Geo. Chase, and the Gloria, operated by W. H. Almy.

Two new mills of 50 tons daily capacity have been constructed since the first of the year. One by W. H. Almy, on his Gloria mine in the Zinc camp, and the Water Creek district. These two mills are the first two mills of strictly Arkansas type that have ever been constructed in the field. They are set on tunnel propositions, and they are built up hill, the dirt being handled largely by gravity instead of by tram.

Three-fourths of the ore that is being mined is carbonate and silicate, the low-grade zinc ores. The other fourth is jack, or high-grade sulphide. The low grades, while they do not bring so much on the market, are more popular with the miners of the field than the high grade, because they are much easier mined, and in nearly every instance need no milling, being ready for sale as mined. At these mines there is no initial expense for installation of expensive machinery, the only tools or machinery being necessary being picks and shovels, and in some instances hand jigs.

At this time between 60 and 70 operators are at work. A large number of the mines are small ones, working from two to eight men, one shift of nine hours. They generally start with a small force, increasing it as the ground is opened up and ore exposed.

Practically all of the ore is being bought by the Edgar Smelting Co. of St. Louis, who keep a buyer in the field.

GASOLINE FROM NATURAL GAS.

A Practical Method for Utilizing Much Waste in Oil Mining.

The Condensation of Gasoline from Natural Gas is the title of Bulletin 88, just issued by the Bureau of Mines, George A. Burrell, Frank M. Seibert and G. G. Oberfell, authors. This report treats of a method of preventing some of the waste of the natural gas incidental to oil mining. This method, the condensation of gasoline from natural gas, offers to the oil operator and others a profitable means of utilizing some of the oil-well gas now being wasted. The most desired constituent of crude oil is obtained, the production of oil is not hindered, and the gas, after the extraction of gasoline, can be returned to the leased area to drive pumps or into pipe lines for uses to which natural gas is ordinarily put, generally with its full value lessened only in a slight degree. The authors say:

"Gas may be found in a sand and separate from oil. It may be found in more than one sand separate from the oil, or the gas sand may be just above and in contact with the oil sand. A given sand may produce oil and gas in one place and in another part of a territory gas only.

"Gas may come from the same sand as the oil itself. It is this manner of occurrence of gas and oil that the authors desire to emphasize, for under these conditions the gas is frequently mixed with enough of the gasoline constituents of the oil to warrant the erection of a plant for the purpose of condensing the gasoline.

"The gas usually finds its way to the atmosphere through the space between the casing of the well and the tubing inserted for the removal of the oil. This gas is the so-called 'casing head gas.' At the beginning of an oil flow, when the flow is natural, a large quantity of gas escapes to the air through the same tubing as the oil. Where the gas finds its exit to the atmosphere apart from the oil at the casing head it is a simple matter to make pipe connections between the casing head and any desired point where the gas is to be utilized. This is frequently done when the supply of casing-head gas is sufficient to warrant its utilization, but frequently, when the supply exceeds the small demands of the lease, the excess is wasted.

"When a well is first drilled the quantity of gas escaping with the oil from the tubing is frequently enormous, being 10,000,000 to 15,000,000 feet or more at times. This gas is wasted. The flow in time diminishes.

"When gas comes with the oil in the flow pipe the two are often separated by means of a gas trap. The oil, entering the top of a drum, settles to the bottom and is withdrawn, and the gas flows off at the top. Many of the plants in California utilize gas that flows with the oil for condensing gasoline. One gasoline plant in the Cushing field, Oklahoma, also uses trap gas. A new type of trap for saving gas from gushers and separating the gasoline is described in this report.

"Oil wells that have passed the flowing stage and are being pumped may still continue to give off much gas at the casing head. The quantity may vary from little or nothing at some wells to 500,000 cubic feet or more at others. When enough of the gas is available it is used for pumping on the lease, the excess being wasted. A steam pumping engine of 50 horse-power requires about 25,000 cubic feet of gas for 10 hours' operation. From 12 to 15 cubic feet of natural gas is needed per horse-power hour for gas engines that are used on leases for pumping oil wells. If there is not enough of the gas available for working pumps, it is all allowed to go to waste, or perhaps some is used for heating and lighting a few scattered houses on the lease.

"The efficient utilization of the wasting casing-head gas ordinarily is a difficult problem. The many miles of pipe that would have to be laid to transport it from a field would usually be an unwarranted expense. However, some towns, among which may be mentioned Warren, Pa., and Sistersville, W. Va., are lighted and heated largely with casing-head gas.

"In general, however, the oil man considers casing-head gas as waste gas and its escape necessary in oil-well operations to permit the maximum flow of oil into the well from the surrounding strata."

The bulletin also treats of the effect of drilling neighboring wells; the effect of formation of waxy sediment; the history of the making of gasoline from natural gas; the chemistry of natural gas, and many other matters of interest along these lines.

FOREIGN NEEDS

Machinery and equipment wanted abroad are mentioned in many letters received by the MANUFACTURERS RECORD, which is so widely read in foreign countries that we are in constant receipt of many letters from all parts of the world. For the benefit of our subscribers seeking foreign trade we publish the following extracts from recent letters:

Wants Agencies for Colombia.

Asbel A. Tejada G., comerciante importador, Cali, Colombia, writes to the MANUFACTURERS RECORD as follows:

"Products that interest me are hand machines for making vermicelli macaroni and similar goods from flour, machinery for making little novelties for domestic use, etc. Would also like to find out about typewriters, to cost about \$30 apiece, for small merchants; also such as might cost \$100 gold. Would like exclusive agency; also like to communicate with manufacturers of hats, shoes, neckties, shirts, stockings, clothing, etc., that I can buy at such a price that they can be sold here in competition with other goods. Also small hand machinery of different kinds, sewing machines, sewing-machine novelties, etc."

From a London Firm.

Birnbaum & Co., Scovell Road, Borough Road, London, S. E., England, write to the MANUFACTURERS RECORD as follows:

"We can import all sorts of articles, specially hosiery and woollens, but we have also a department for small wooden articles for household. If you could put us in touch with some manufacturer of wooden articles who could undertake to manufacture special lines to patterns we should be greatly obliged. We can state that now American manufacturers could take English trade into their own hands. If they could only get accustomed to make their terms on a basis as the Germans used to do, viz., to quote everything c. i. f. London, less 2 1/2

per cent. cash discount 30 days, we are certain large sales of American goods could be achieved. We are prepared to buy f. o. b. New York or any port, but there are a great many importers who do not entertain such offers at all. We would also work on a commission basis if we could come in touch with the right manufacturer, as long as they could entertain the usual terms. There is also a large business to be done in wire screw hooks. The name of such a manufacturer will be esteemed a favor."

Finland Firm Wants Motor-Sleighs.

Newman Machine Co., Greensboro, N. C., writes to the MANUFACTURERS RECORD, sending a copy of a letter from Aktiebolaget T. & J. Salvesen, Lauritsala, Finland, which firm writes as follows:

"Our requirement is a motor-sleigh to replace horses for taking manure to fields. Ought to be strong enough to tow 8 or 10 sleighs. The reason for having a tow of 8 or 10 sleighs instead of one sleigh, with the same capacity as 10, is that it will be used on bad roads on snow and the load must be distributed over a length of the road so as not to press the sleigh down into the snow. Capacity of sleighs to be used about 18 cubic feet, so total load of manure to be towed is about 180 cubic feet. Ground to be covered by motor-sleigh is fairly level. Winters here are much like Canada. Could you give us an estimate as to cost, horse-power required and drawings, and if you will undertake to build one? On large farms the fields are 6 to 10 miles from the stables and cowhouses, and a lot of horses are required to take the manure to the fields; therefore, we think the work could be done cheaper with motor-power. If the machine is found successful we think there would be a great demand for same."

For Australia Representation.

O. L. Remington, general manager, William McLean & Co., Melbourne, Australia, writes to the MANUFACTURERS RECORD about as follows:

"The writer has just arrived in the States with one of our engineers, and we are investigating closely methods, machinery and new developments. Be good enough to announce our interests in machinery, etc., as particularly applied to our business as engineers, manufacturers and importers. I am making a short visit at 3219 N. Capitol avenue, Indianapolis, Ind., where I can be addressed. In a week or two I will join our engineer, H. P. McColl, who has reached Chicago, at the Hotel LaSalle there. We will work through all the industrial centers to the East and then cross to England."

Wants Carbonate of Potassium.

Ernest Louis Max, Place Sadi-Carnot 4, Marseille, France, writes to the MANUFACTURERS RECORD as follows:

"I am buyer, for prompt shipment, of 50 tons carbonate of potassium. Lay my demand before a competent manufacturer and request him to cable me a firm offer c. i. f. Marseille. Price in shillings per hundredweight. Should price be convenient I will cable acceptance and if desired open confirmed bankers' credit in London or New York."

Cellulose and Old Iron.

Tonna & Ghirlando, 28 Boulevard St. Denis, Paris, France, write to the MANUFACTURERS RECORD as follows:

"We have an inquiry for several thousand tons of old iron for Italian Government, and ask firms to send offers for immediate delivery. Could also sell, in Italy, cellulose for paper use; also interested in malt."

Cloth Tissues.

George C. Stringo, Piraeus, Greece, writes to the MANUFACTURERS RECORD as follows:

"Give me names and addresses of manufacturers of cloth tissues."

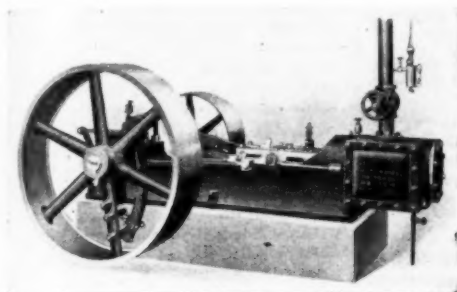
MECHANICAL

Illustrations and descriptions having news value pertaining to developments in machinery, mechanical devices and inventions will be considered for use in this department.

Schofield Automatic Engine.

Power users will be interested in the accompanying view of the Schofield automatic engine, built complete by the J. S. Schofield's Sons Co., Macon, Ga. The heavy-duty Schofield engine of throttling type has for years enjoyed an enviable reputation. The same qualities which established this reputation are embodied in the Schofield automatic engine: simplicity of design, substantial construction and accurate workmanship. Describing this engine, the company states:

"The valve is similar to the valve which has given such excellent results in the Schofield throttling engine. It is a double-ported perfectly-balanced valve, sometimes known as the Sweet valve, designed for the most economical steam distribution at the normal load of the automatic engine. This valve is fitted by experts, who make a specialty of this work. The accuracy with which they are fitted is remarkable. The valves after years of constant service show no perceptible wear, which would not be the case without workmanship



SCHOFIELD AUTOMATIC ENGINE.

of the highest accuracy. Obviously very little governor power is required to control this valve, but the Schofield automatic governor is very powerful. It is of the leaf spring type, most widely approved by engineers, as it removes the pressure caused by the centrifugal force of the governor weight from the governor bearings. The entire centrifugal force of the governor weight is opposed by a leaf spring, which is made of vanadium steel, the very best spring steel on the market. The connections between the governor weight and the valve are as simple as can be made for best results. The governor is remarkably sensitive to extreme variations in load, a result attained by exhaustive experiments.

"The engines are tested before shipment and adjusted to the speed required by the customer. Should a change of speed be desired, the necessary adjustments may be readily made by any one capable of making the simplest adjustment about an engine. Other features of the engine are of the most approved design and construction for automatic slide valve engines. The Schofield automatic engine throughout is the finished product of expert engine builders."

Telephones for Mine Rescue Work.

Telephone communication between advance or rescue party and outside of mine in case of mine accidents is a feature of the daily demonstration of the United States Bureau of Mines Rescue Crew, conducted in connection with the Bureau's exhibit at the Panama-Pacific Exposition. The Western Electric Co. of New York states:

"This exhibit, in the Palace of Mines and Minerals, consists primarily of a model mine constructed under the floor of the building in which are installed on exhibit appliances the use of which promote safety and efficiency in mine work.

"One of the features is the daily rescue drill by a crew of four or five men under the supervision of Engineer Edward Steidel, in charge of the Bureau's exhibit. Twice a day, in response to a telephone message that an explosion has occurred in the mine, the rescue crew in its especially designed motor car rushes through the Exposition Grounds and up to the entrance of the

building. After putting on oxygen helmet breathing apparatus and Western Electric mine rescue telephone apparatus, they go into a glass-walled room on the main floor of the building. This room is filled with smoke and gas fumes. The crew demonstrates that they can actually breathe and work in the midst of smoke and poisonous gases. They then go below into the mine and bring out a supposedly injured miner, to whom they administer 'first-aid' treatment. All the time the rescue crew is in the smoke-filled room and in the mine they are in constant communication with the outside by telephone equipment.

Each rescue member wears strapped to his throat a small especially-designed transmitter and a watch-case receiver strapped to his ear. This apparatus is connected with a coil of flexible wire, carried by the chief of the party on his belt, which pays out as the party advances. The other end of this wire terminates in telephone equipment worn by the person in charge of directing the rescue work at the rear or on the surface. The reason for this special equipment is that a man wearing any of the different types of oxygen helmets which cover his mouth cannot use the ordinary type of telephone transmitter. The throat transmitter furnished transmits speech practically as well as the standard type of telephone instrument, and is very small and light, and is provided with a soft rubber cup which assists in holding it firmly against the throat.

"In the past many losses of life have occurred to members of rescue parties which unquestionably could have been avoided if there had been some means of communicating with the rear to advise when in need of aid which could easily have been given. Another feature of importance is that such an intimate and constant communication with another human being on the outside encourages the rescuer and prevents those sudden waves of overpowering fear which everyone is more or less subject to in times of great danger, particularly when in the darkness and alone.

In addition to the apparatus mentioned, the standard Western Electric mine telephones of the iron box underground type are installed and in operation throughout the model mine in typical locations."

Southern Pacific Grain Elevator.

The Southern Pacific Terminal Co.'s grain elevator (illustrated herewith) at Galveston is nearing completion to replace plant previously destroyed by fire. It is of reinforced concrete fireproof construction, costing about \$500,000, for a daily capacity of 1,003,000 bushels of grain. James Stewart & Co., Houston, St. Louis and other cities, are the contractors, and their work is essentially as follows: Forty-eight tanks, partially independent of each other, capacity 74,000 bushels; each tank 98 feet high by 15½ feet in diameter; 35 interstice tanks (between larger tanks), with capacity of 117,500 bushels; 22 bins (forming part of workhouse), with capacity of 212,100 bushels; 98x48-foot workhouse;

96x74-foot track shed, with four tracks. Foundations built by Southern Pacific Terminal Co. under direction of H. F. Jones, construction engineer, requiring 4500 pilings, each 40 feet long; on latter is laid concrete slab composed of 15,000 yards of crushed rock, 14,000 wheelbarrows of cement and 6000 yards of sand. This ele-



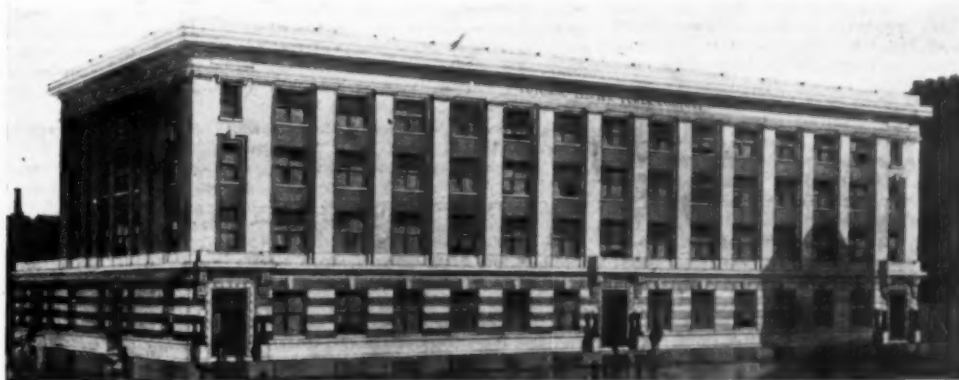
SOUTHERN PACIFIC GRAIN ELEVATOR, GALVESTON.

vator will handle 336 cars of grain in 24 hours. Its equipment will include electric power, silent chain drives, telephone system, passenger elevators, automatic dust collectors, automatic sprinklers, sacklers, machine shovels, drays, electric signals, etc.

Fletcher Enamel Works.

A recent addition to the manufacturing enterprises of Dunbar, industrial suburb of Charleston, W. Va., is the Fletcher Enamel Co., with a daily capacity of 20,000 pieces of finished enamel ware. The works occupy two acres of land, and include buildings with 65,000 square feet of floor space, besides a 120x50-foot structure. These buildings have brick walls, with concrete floors, steel roof trusses, steel window sashes and monitor skylights. They include the main structure, divided into a 243x100-foot stamping department, 200x152 enameling department, 156x106-foot shipping department and 144x48-foot grinding department. A 120x50-foot building contains the pickling department. The equipment of machinery includes 150 horse-power gas engine, 115-kilowatt electric generator, drawing presses driven by individual motors, lathes, double seamers, electric welding machines, furnaces, dryers, smelters, etc., with about 200 employees. U. G. Fletcher of Charleston is the company's president, M. V. Ream of New Philadelphia, O., being vice-president and Solon Fletcher of Charleston being secretary-treasurer.

Potomac Electric Power Co.'s Building.



POTOMAC ELECTRIC POWER CO.'S OFFICE BUILDING, WASHINGTON.

The Potomac Electric Power Co., 14th and C streets N. W., Washington, D. C., will erect a handsome building at its present location for use as general offices of the company. The building will rest on a foundation of reinforced concrete 192x96 feet. The superstructure will be five stories, of stone and brick, the exterior to be finished in pressed brick, with stone and bronze trimmings. Floor construction is to be of reinforced slab concrete. Electric elevators will be installed. Milburn, Heister & Co., Union Savings Bank Building, Washington, prepared the plans for and will open bids May 9 for the erection of the building. The cost is estimated at \$200,000. An accompanying illustration shows the building as it will appear on completion.

Construction Department

IN ORDER TO FOLLOW UP

Properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be written on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will generally be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur, as our reports are often published before new companies are known and before they have any established office for the receipt of mail.

WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

DAILY BULLETIN

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year.

All advertising contracts in the Manufacturers Record for three months or longer include a subscription to the Daily Bulletin for the contract period, as well as a subscription to the Manufacturers Record.

BRIDGES, CULVERTS, VIADUCTS

Ala., Birmingham.—City Com. plans to construct viaduct at 21st St.; Julian Kendrick, City Engr.

Ala., Goshen.—Pike County Comms., Troy, Ala., let contract Scruggs & Ard of Birmingham at \$14,333 to construct reinforced concrete bridge over Conecuh River at Smiley's Crossing. (Call for bids lately noted.)

N. C., Durham.—Durham County Comms. let contract Camden Iron Works of Roanoke at about \$26,000 to construct 4 steel bridges as follows: Bridge across Flat River at Mangum's Mill, 2 spans, 100x16 ft.; over Eno River, Coles Mill Rd., 128-ft. span, 12-ft. roadway; over Eno River at Geers Mill, Guess Rd., 2 spans, 100x16 ft.; over Little River, Monks Ford, Guess Rd., 70-ft. span, 16-ft. roadway; all steel superstructures and concrete substructures.

Ky., Louisville.—Louisville & Nashville R. R., W. H. Courtenay, Ch. Engr., will construct bridge to cost about \$12,000.

Miss., Sunflower.—Larimer & Burget Bridge Co. of Memphis, Tenn., has contract at about \$20,000 to construct steel bridge across Sunflower River.

Mo., Joplin.—City will vote May 18 on \$15,500 bonds to construct lately-noted viaduct, N. Main St., over tracks of Kansas City Southern Ry. and Joplin Union Depot companies; J. B. Hodgdon, Commr. of Streets and Public Improvements, in charge of details, if bonds are voted.

Okla., Oklahoma City.—Oklahoma county, M. Cornelius, Clerk, will construct 1 20-ft. and 1 10-ft. reinforced concrete arch bridge, repair and build addition to steel bridge across Deep Fork River, and remove and re-erect steel bridge over Deep Fork River; bids until May 8. (See Machinery Wanted.)

Tex., Lockhart.—Caldwell County Comms. let contract Austin Bros. of Dallas to construct concrete bridges and culverts in various sections of county; cost \$15,000.

W. Va., Marlinton.—Pocahontas County Comms. will construct bridge 350 ft. long across Greenbrier River.

W. Va., Point Pleasant.—Mason County Comms. having plans prepared for 5 bridges.

W. Va., Webster Springs.—Webster County

Comms. will construct bridge across Gauley River; cost about \$5000.

CANNING AND PACKING PLANTS

Fla., Live Oak.—Live Oak Canning Co., capital stock \$5000, inceptd. with J. C. Henry, Pres.; G. L. Dorman, V.-P.; A. P. Mickler, Treas.; W. E. Quarterman, Gen. Mgr. and Secy.; will establish cannery with daily capacity 10,000 cans vegetables and fruits; let contract for machinery costing \$1500. (Noted in March.)

Mo., St. Louis.—Heil Packing Co. will build 2-story packing plant to cost \$7500; Contr., E. Shassere.

Tex., Navasota.—Navasota Canning Co. (officers not yet elected) will operate lately-noted cannery; building plans not completed, but structure to be of mill construction and erected by force account; machinery purchased; capacity 10,000 cans daily.

CLAYWORKING PLANTS

Ga., Columbus.—Pipe, Tile, etc.—F. L. Dickey of Kansas City, Mo., purchased capital stock of R. B. Small Co.; will continue plant; manufacture sewer and railroad culvert pipe, partition tile, etc.; later will enlarge and improve; J. E. Minter, Mgr.

Miss., Vicksburg.—Bricks.—Home Brick Co., capital \$10,000, inceptd. by J. W. Collier, J. K. Hirsch, John Brunini and others.

COAL MINES AND COKE OVENS

Ala., Birmingham.—Indio Coal Co., capital \$50,000, inceptd. by Sterling A. Wood of Birmingham, Emil L. Dosenbach and Dan A. Dosenbach of St. Louis.

Ky., Hazard.—Blue Grass Coal Corp., Johnson City, Tenn., capital \$100,000, chartered; S. R. Jennings, Pres.; H. K. English, V.-P. and Mgr.; acquired property of Hazard-Dean Coal Co. and will improve and enlarge; develop 1000 acres; daily capacity 300 to 500 tons.

Ky., Lackey.—Black Diamond Coal Co. organized; Forrest B. Preston, Pres., Emma, Ky.; D. L. Porter, V.-P.; Sam Porter, Secy.-Treas., both of Prestonburg, Ky.; Edw. Holley, Constr. Engr., Pikeville, Ky.; F. B. Preston, Mgr.; will develop 250 acres coal land; estimated daily capacity 400 tons;

has equipment. (Lately noted inceptd. under Ky., Prestonburg.)

Ky., Louisville.—O'Donnell Coal Co. increased capital stock from \$20,000 to \$40,000 and changed name to O'Donnell Coal & Sand Co.

Ky., Middlesboro.—L. C. Gunter purchased Luke & Drummond Coal Co.; plans improvements; develop mines to daily capacity of 1000 tons, build 20 or 30 houses and enlarge store.

Ky., Pineville.—Continental Coal Corp., L. E. Yoder, Ch. Engr., Pineville, has begun construction railroad spur from its Straight Creek branch to tap 1000 acres Straight Creek coal; this property worked for 20 years from another operation, 2 mi. west of new location; purchased 300 H. P. additional boiler capacity as auxiliary to power plant, now being moved to new site; has developed mines to daily capacity 2000 tons coal; let contract South Side Foundry & Machine Works, Charleston, W. Va., for tippie equipment comprising cross-over dumps, weigh, pans, feeders, shaking screens and loading booms.

Tenn., Knoxville.—Big Heat Coal Co. incorporated by J. J. Roberts, E. M. Wilkerson, C. S. Jenkins and others.

Tenn., Knoxville.—Crystal Coal Co., capital \$50,000, inceptd. by W. S. Roberts, E. M. Wilkerson, J. J. Roberts and others.

Va., Bristol.—Blue Grass Coal Corp. (lately noted inceptd.) will operate in Kentucky. (See Ky., Hazard.)

W. Va., Grafton.—Holly-Elk Coal Co., capital stock \$100,000, inceptd. by John T. McGraw and Geo. A. Hechmen of Grafton, J. W. Woodell and J. M. Hoover of Webster Springs, W. Va.

CONCRETE AND CEMENT PLANTS

W. Va., St. Albans.—Ties, etc.—Triple State Concrete Tile & Mfg. Co., capital \$100,000, inceptd. by A. S. Alexander, T. W. Woodward, C. F. Payne and others, all of Charleston.

COTTON COMPRESSES AND GINS

Okla., Maysville.—Farmers & Merchants' Gin Co., capital stock \$5000, inceptd. by R. J. Wigley, W. E. Bailey, J. R. Hamm and others.

Tex., Abilene.—J. M. Dunnigan will install equipment to operate gin by electricity.

COTTONSEED-OIL MILLS

Ga., Athens.—Southern Cotton Oil Co., Atlanta, Ga., P. R. Lamar, Dist. Mgr., has not definitely decided all details for lately-noted rebuilding of burned plant, but will erect 3-press cottonseed-oil mill, the company handling the construction.

Miss., Natchez.—Natchez Oil Mill, capital \$75,000, inceptd. by H. M. Alexander, Chas. F. Engle, W. R. Mangum and others.

DRAINAGE SYSTEMS

Tenn., Union City.—Obion River Drainage Dist., J. A. Coble, Secy., let contract at \$208,000 to Swamp Dredge Co. of Tupelo, Miss., for lately-noted construction; canal, 16 mi., 36 ft. wide; levee, 16 mi., 6 to 11 ft. high; floating dredge work; drain 18,000 acres for agriculture.

ELECTRIC PLANTS

Ga., Jefferson.—Jefferson Electric Co. will obtain electricity for lately-noted plant from Athens Ry. & Electric Co., Athens, Ga.; equipment (orders placed) includes 10-mi. transmission line, cost \$8000, and switchboard panel, cost \$700; Jefferson Electric Co. to install distribution lines, transformers, meters, etc., in Jefferson.

Ga., Rome.—City does not contemplate erection of electric plant in near future. (Lately noted.)

La., New Orleans.—New Orleans Ry., Light & Power Co. is reported to expend \$125,000 enlarging power plant on river front at Market St.; addition to cost \$25,000 and machinery \$100,000.

La., Oberlin.—City is considering construction of electric-light plant and water-works; W. D. Stockwell, Mayor.

Ky., Mt. Olivet.—Robertson County Light & Power Co. organized by W. R. Bethel and

Roy H. Threlkeld; secured franchise; will build electric-light and power plant.

La., Jennings.—Jennings Electric Co., capital stock \$5000, inceptd. by Robt. B. Montgomery, D. Gaylord Powell and Harry A. Kolb.

Mo., Deepwater.—City let contract Industrial Iron Works, Clinton, Mo., for electric-light plant; brick building; equipment to include generator and exciter, switchboard, transformers, etc.; Engr., J. P. Davis, Windsor, Mo.; G. G. Kennedy, City Clerk. (Call for bids lately noted.)

Mo., Granby.—Empire District Electric Co. of Joplin, Mo., will make improvements to provide Granby mining district with electric power and increase capacity of Neosho Electric Co., subsidiary; extend line from Diamond for 17 mi.

Mo., Skidmore.—Mound City Electric Light & Ice Co. applied to city for franchise to construct electric-light system; proposes to construct transmission line to Skidmore via Graham.

Mo., Springfield.—Heer-Andres Investment Co. states has not definitely decided to construct lately-reported power plant to supply electricity to mercantile store.

Mo., St. Louis.—Board of Public Service let contract to install electric-light plant at Industrial School of Fort Belfontaine; estimated cost \$3000.

N. C., Lumberton.—City votes May 11 on sale of electric-light plant to Yaddin Power Co. for about \$15,000. Address The Mayor.

N. C., Mt. Olive.—City has contracted for electricity for lighting and power; company will install dynamo. Address The Mayor.

Okla., Adamson.—Adamson Light & Power Co., capital stock \$5000, inceptd. by Jas. R. Williams, Nancy Williams, Gerald Riedt and Lillian Riedt.

Okla., Hugo.—Hugo Ice & Light Co. will expend \$30,000 on addition to plant; install 500 K. W. mixed-pressure turbo-generator with condenser and cooling spray pond and 400 H. P. boiler; develop 750 H. P.; contracts awarded. (Lately noted.)

S. C., Charleston.—Standard Electric Co., capital stock \$10,000, inceptd.; M. M. Glasser, Pres.-Treas.; Jacob Glasser, Secy.

Tenn., Humboldt.—Comms. electric-light plant and water-works, W. M. Case, Mgr., contemplates installing electrically-driven centrifugal pump and to rebuild electric distributing system.

Tex., Abilene.—American Public Service Corp., New York, is reported to extend electric transmission system from Abilene to Cisco, Clyde, Putnam, Baird and probably other cities; extension to be high-tension line 48 mi. long; Abilene plant to be distributing point for all electric power.

Tex., Victoria.—City voted \$40,000 bonds to construct electric-light plant. Address The Mayor.

Va., Alexandria.—Alexandria County Lighting Co. (Municipal Service Co., 1330 Land Title Bldg., Philadelphia, Pa.) let contract for installation 1250 K. W. General Electric Co. (Schenectady, N. Y.) turbine and surface condensers equipment of Wheeler Condenser & Engineering Co., Carteret, N. J.; F. R. Weller, Consult. Engr., 405 Hibbs Bldg., Washington, D. C.

Va., Charlottesville.—Charlottesville & Albemarle Ry. Co., J. L. Livers, V.-P., 247 W. Main St., Charlottesville, will erect substation, garage and office building at Ridge and W. Main St.; 50x80 ft.; 2 stories and basement; cost about \$15,000; Neff & Thompson, Archts., Norfolk, Va.; bids opened about May 15. (Lately noted.)

Va., Staunton.—Staunton Lighting Co. (Municipal Service Co., 1330 Land Title Bldg., Philadelphia, Pa.) let contract for installation of 1250 K. W. General Electric Co. (Schenectady, N. Y.) turbine and surface condenser equipment of Wheeler Condenser & Engineering Co., Carteret, N. J.; F. R. Weller, Consult. Engr., 405 Hibbs Bldg., Washington, D. C.

FERTILIZER FACTORIES

Va., Staunton.—Lime.—State is progressing with construction of lime-grinding plant; Smith-Courtney Co., Contr., Richmond, Va., advise that plant will have daily capacity of 200 tons limestone; steel work is being installed for Richmond Structural Steel Co.,

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

Richmond; crusher of Gates gyratory type; pulverizers and elevators by Jeffrey Mfg. Co., Columbus, O.; electric motors furnished by General Electric Co., Schenectady, N. Y. (Previously noted.)

FLOUR, FEED AND MEAL MILLS

Ala., Decatur.—Lynnville Mill & Elevator Co. is considering plans for rebuilding flour mill and grain elevator lately noted burned at estimated loss of \$100,000; temporary office with Decatur Ice & Coal Co.

Ky., Dover.—C. C. Pyles of Ewing contemplates building feed mill; size not decided; considering installation of 10 H. P. gasoline engine, 22-in. set of buhrs and a corn crusher. (See Machinery Wanted.)

N. C., Clinton.—Clinton Milling Co. organized with J. H. Turlington, Pres.-Treas.; G. W. Rackley, V.-P.; C. W. Petty, Secy.; will establish flour mill with daily capacity 25 bbls. and feed mill with daily capacity 200 bu.; electric power; machinery purchased. (Lately noted inceptd. with \$50,000 capital.)

Okla., Oklahoma City.—O. T. I. Mill Co., capital stock \$10,000, inceptd. by D. F. Sollday, G. A. Nichols and Chas. Mang.

S. C., Charleston.—Molony & Carter Co., 254 Meeting St., will erect building 200x100 ft. for feed and meal mill; portion 2 stories and balance 1 story; wood, with corrugated iron sheathing; install equipment to crack corn, mix sugar and chicken feed, crush oats, etc.; daily capacity 150 tons horse and mule feed and 50 tons other feed; contract for most of machinery let to W. J. Savage, Knoxville, Tenn.; estimated cost of land and building \$20,000, machinery \$10,000, sprinkler system \$2000, office \$2500, and stables \$1500; total \$36,000; Archt. and Engr., Henry Oliver, Broad St., Charleston. (Lately noted.)

S. C., Lake City.—Chas. M. Kelley will build 25-bbl. roller mill, grist mill and feed mill.

S. C., Ruby.—Ruby Roller Mills, capital stock \$5000, inceptd. by Dr. R. M. Newsom, J. S. McGregor and J. C. Huntley, Jr.

Tenn., Springfield.—Robertson County Farmers' Mill, Coal & Elevator Co. inceptd. by John S. Powell, B. M. Rawls, M. D. Woodard and others; will build flour mill, grain elevator and coal chute.

Tex., Pharr.—McCracken Land Co., 307 Scanlan Bldg., invites bids until May 10 to build mixed feed plant and corn elevator; Geo. E. Thomas, Trustee. (See Miscellaneous Enterprises.)

Tex., Vernon.—Kell Milling Co.'s lately noted improvements (under construction) include 50x80-ft. warehouse and elevator of 125,000 bus. capacity; concrete construction; contracts let in March to Burrell Engineering & Construction Co., Chicago, and B. J. Carrieco, Fort Worth; no cleaning machinery; warehouse to cost \$6000; concrete tanks for grain, \$20,000; has let contract for equipment to increase daily milling capacity from 300 to 450 bbls. flour.

Tex., Taylor.—Temple-Thrall Oil & Gas Co., capital stock \$10,000, inceptd. by Mark McCrory, F. S. Way and L. W. Whitlitz.

Tex., Taylor.—Traveling Men's Oil & Gas Co., capital stock \$15,000, inceptd. by W. B. Howard, Howard Hoke and J. J. Myers.

Tex., Taylor.—Neill Oil Co., capital stock \$26,000, inceptd. by C. R. Starnes, C. D. Teer and W. D. Gardner.

Tex., Taylor.—High Grade Oil Co., capital stock \$35,000, inceptd. by A. Alexander, H. A. Wroe and T. W. Marce.

Tex., Taylor.—Home Oil Co., capital stock \$25,000, inceptd. by C. T. Everett, Joe Staesny and John Bohls.

Tex., Taylor.—Eureka Oil Co., capital stock \$25,000, inceptd. by F. C. Floeckinger, C. O. Dallet and C. J. Hafner.

Tex., Taylor.—Citizens' Oil & Gas Co., capital stock \$40,000, inceptd. by F. Kutzbach, Albert Wolters and A. W. Gould.

Tex., Taylor.—Fritz Fuchs Oil Co. inceptd; capital stock \$50,000; will make developments; receiving drilling and piping bids; J. M. Forwood, Trustee; lately noted under Tex., Thrall. (See Machinery Wanted.)

Tex., Taylor.—Mutual Oil & Gas Co., capital stock \$25,000, inceptd. by Alex. P. Hicks, A. Rosenberg and Thomas J. Duffy.

Tex., Temple.—Northeast Oil Co., capital stock \$30,000, inceptd. by C. B. Wade, C. E. Thompson and H. M. Meisner.

Tex., Temple.—Ford Oil Co., capital stock \$10,000, inceptd. by Frank Doering, A. J. Kuykendall and George A. Cox.

Tex., Thorndale.—Crockett Oil Co., capital stock \$15,000, inceptd. by D. R. Maddox, H. L. Crockett and L. D. Watkins.

Tex., Taylor.—First Climax Oil Co., capital stock \$24,000, inceptd. by Walter Willis, A. D. Boggs and B. B. Rowland.

W. Va., Charleston.—Tippie Equipment.—Kanawha Mine Car Co. changed name to Kanawha Manufacturing Co. and increased capital stock to \$150,000; will build concrete and steel addition, 45x100 ft., to construction shop of tippie department.

W. Va., Huntington.—Machinery.—Ohio Valley Machine Works, capital stock \$10,000, inceptd. by W. W. Magoon, L. A. Walcott, H. W. Jones and others.

GAS AND OIL ENTERPRISES

Okla., Bartlesville.—Okla-Penn Oil Co., capital stock \$10,000, inceptd. by E. T. Smith, Nevlin Campbell, E. J. Smith and M. W. Smith.

Ala., Birmingham.—Birmingham Co., capital stock \$200,000, inceptd. by M. W. Howard, Prest.; F. M. Fossett, V.-P.; M. A. Hines, Treas.; Mary Boykin, Secy.

La., Alexandria.—Cottile Oil & Gas Co., capital stock \$35,000, inceptd. by H. A. Joyner, Prest.; Dr. D. K. Texada, V.-P.; A. S. Bass, Secy.-Treas.

La., Saline.—People's Oil & Mineral Co., capital stock \$500,000, is being organized.

Okla., Drumright.—Shaffer County Gas Co., capital stock \$100,000, inceptd. by W. E. Nico-demus, L. E. Gibson, C. C. Elliott and others.

Okla., Oil City.—Arkoma Oil & Gas Co., capital stock \$200, inceptd. by Ward Davis, J. B. Wilson, J. B. Davis and C. W. Duncan.

Okla., Oklahoma City.—Orlando Oil & Gas Co., capital stock \$60,000, inceptd. by Ellis T. Tobin and John Tobin of Oklahoma City, Ed Welch of Tulsa and others.

Okla., Tulsa.—Sina Oil Co., capital stock \$6000, inceptd. by E. R. Perry, M. Dickerman and R. R. Poe.

Okla., Tulsa.—Yampa Oil Co., capital stock \$6000, inceptd. by R. R. Perry, R. R. Poe and N. Dickerman.

Tex., Austin.—Five Tracts Oil Co., capital stock \$25,000, inceptd. by H. A. Wroe, H. C. Nolen and John H. Tobin.

Tex., Bastrop.—Bastrop Oil & Gas Co., capital stock \$50,000, inceptd. by R. G. Starcke, J. T. Crysp and A. C. Erhard.

Tex., Bryan.—Smith-Oliver Oil Co., capital stock \$12,500, inceptd. by F. C. Oliver, W. D. Lawrence and Geo. W. Smith.

Tex., Caldwell.—Grant Oil Co., capital stock \$25,000, inceptd. by T. G. Heslop, M. D. Rogers and E. G. Jenkins.

Tex., Gainesville.—Oil Refinery, etc.—Producers' Refining Co., 216 Finance Bldg., Kansas City, Mo. (lately noted inceptd., capital stock \$600,000, and to build pipe line from Healdton oil field to Gainesville), advises: "50 ml. 8-in., 10 ml. smaller; capacity of pumping station, 18,000 bbls. daily."

Tex., Granger.—Midway Oil Co., capital stock \$17,000, inceptd. by G. F. Wilcox, Lee Denison and A. A. Young.

Tex., Granger.—Granger-Thrall Oil Co., capital stock \$17,000, inceptd. by C. D. Teer, W. P. Young and W. D. Gardner.

Tex., Granger.—Storrs-Young Oil & Gas Co., capital stock \$20,000, inceptd. by A. W. Storrs, C. D. Teer and C. E. Wayman.

Tex., Houston.—El Campo Oil Co., capital stock \$8000, inceptd. by T. W. Horn, D. B. Cherry and C. W. Ransom.

Tex., Jacksonville.—Jacksonville-Thrall Oil Co., capital \$30,000, inceptd.; L. F. Weeks, Prest.; O. D. Jones, Secy.-Treas.

Tex., Taylor.—Temple-Thrall Petroleum Co., capital stock \$10,000, inceptd. by Mark McCrory, F. S. Way and L. W. Whitlitz.

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Tex., Taylor.—German-Thrall Oil & Gas Co., capital stock \$25,000, inceptd. by A. E. Aschliman, John Meiske and R. B. McConnell.

Tex., Temple.—Power Oil Co., capital stock \$7500, inceptd. by C. L. Power, D. G. Wilson and Thos. C. Hall.

Tex., Thrall.—Thrall Six-Well Oil Co., capital stock \$75,000, inceptd. by H. C. Meyer, R. C. Hale and E. B. Phillips.

Tex., Thrall.—Thrall Success Oil Co., capital stock \$25,000, inceptd. by W. D. Turner, M. M. Offield and A. D. Cannon.

W. Va., Branchland.—Huntington Development & Gas Co. of Huntington let contract Miller Supply Co. of Huntington to build gas-compressor plant near Branchland to cost \$100,000; site 4 acres; Geo. W. Schell is Consult. Engr. and will supervise installation; Miller Supply Co. advises: "We have contract for all machinery, including 4 500 H. P. horizontal double-acting 4-cylinder natural gas engines, direct connected to double-acting single-stage natural-gas compressors, all auxiliary equipment, installation of same, and erection of all buildings; materials contracts placed."

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Ga., Macon.—Thos. N. Baker Lumber Co., capital stock \$100,000, inceptd. by Thos. N. Baker, F. W. Armstrong and J. E. Beasley.

Miss., Estill.—Shepard-Jenkins Lumber Co., capital stock \$5000, inceptd. by John J. Shepard and Burton W. Jenkins of Estill and H. A. Hoover of Chicago.

Mo., Altamont.—Farmers' Lumber Co., Chas. F. Lindsey, Prest. (lately noted inceptd., capital \$8000), will handle lumber, cement and coal; is erecting 60x80-ft. \$1500 building.

Mo., St. Louis.—E. R. Darlington Lumber & Coal Co., capital stock \$153,300, inceptd. by E. R. Darlington, Alice Pennebecker and Harrah T. Perry.

N. C., Asheville.—Boone Fork Lumber Co., capital stock \$50,000, inceptd. by W. S. Whitney, A. S. Barnard and D. Merrick.

N. C., Greensboro.—King Lumber Co., capital stock \$4000, inceptd. by R. R. King, R. R. King, Jr., and N. M. King.

N. C., Maxton.—Barber-Paschall Lumber Co. will rebuild plant lately noted burned at estimated loss of \$25,000.

N. C., Newbern.—Chas. H. Hall will build saw and planing mill; daily capacity, 20,000 to 25,000 ft. sawed and planed timber.

N. C., Stokesdale.—Keene Lumber Co., capital \$4000, inceptd. by R. R. King, R. R. King, Jr. and N. M. King, all of Greensboro.

N. C., Winton.—Maryland-Carolina Lumber & Timber Co., 302 Carroll Bldg., Baltimore, Md., organized with R. H. Robinson, Lancaster, Va., Prest.; R. C. Bridges, V.-P.; B. B. Norris, Baltimore, Secy.-Treas. (Lately noted inceptd., capital stock \$120,000.)

Tenn., Carter County.—Whiting Lumber Co., Philadelphia, Pa., and Asheville, N. C., purchased timber land near North Carolina-Tennessee State line; will build lumber plant in Carter or Johnson county; construct standard-gauge railroad from Butler, Tenn., where it will connect with Virginia & Southwestern Ry., to crest of Blue Ridge, where Whiting company controls timber forests; J. M. Lacy, Elizabethton, Tenn., will superintend construction of mill and railroad.

Tex., Palestine.—North Texas Lumber Co., Wesley Morse, Prest., is reported as considering erection of band sawmill, planing mill, drykilns and lumber yards.

MINING

to construct canal connecting 20 lakes adjacent to Winter Haven; 20 ft. wide at water line; 4 ft. deep; lakes connected will give continuous waterway of about 20 mi.; plans and specifications by Atlantic Engineering Co. of Savannah, Ga. (Call for bids lately noted.)

Ga., Augusta—Levee.—River and Canal Com., 747 Broad St., let contract Globe Dredging Co. of Savannah at \$46,904.40 to construct Section 5 of earth levee along Savannah River, comprising 516,000 cu. yds., and to H. C. Morrison and C. E. Glover of Augusta at \$74,240 for Section 6, comprising 512,000 cu. yds.; Nisbet Wingfield, Ch. Engr. (Call for bids lately noted.)

Ky., Louisville—Underpass.—Park Comms. let contract Geo. M. Eady at \$292 to construct city's part of underpass from Brook to Floys St. on Eastern Parkway; walls of approach to be of concrete; Engrs., Stone-street & Ford, Louisville Trust Bldg., Louisville. (Lately noted.)

La., New Orleans—Levee.—Board of State Engrs. invite bids until May 11 to construct following levees on Red River: Willow Chute Levee, Bossier parish, left bank, 54,000 cu. yds.; Starlight Levee, Red River parish, right bank, 16,000 cu. yds. (See Machinery Wanted.)

La., Shreveport—Levee.—Comms. Caddo Levee Dist. invite bids until May 12 to construct Red Bayou Levee; contents, 72,000 cu. yds. (See Machinery Wanted.)

Md., Cumberland—Retaining Wall.—City Comms. let contract Brady Bros. of Frostburg to build retaining wall between upper and lower Bedford St.

Mo., Kansas City—Dike.—Government will construct 5500 ft. standard 3-row timber dike on Missouri River, 6 mi. from Waverly; bids at U. S. Engr. Office until May 24; Herbert Deakyn, Lieut.-Col., Engrs. (See Machinery Wanted.)

Mo., Kansas City—Dike.—Government will construct 1000 ft. standard 3-row timber dike and 5000 ft. standard revetment on Missouri River, 6 mi. below Waverly; bids received at U. S. Engr. Office until May 24; Herbert Deakyn, Lieut.-Col., Engrs. (See Machinery Wanted.)

Mo., Normandy—Boiler-house.—Daughters of Charity of St. Vincent have plans by Barnett, Haynes & Barnett, Century Bldg., St. Louis, for boiler-house; 70x100 ft.; reinforced concrete and steel.

N. C., Wilmington—Breakwater.—D. L. Taylor & Co. (D. L. Taylor and Robt. Lacy, Medina, N. Y., have construction offices at Morehead City, N. C., with Robt. Lacy in charge; develop granite quarry at Neverson, N. C., and build dock at Morehead City, N. C., to transfer stone from railroad cars to scows; are transferring derrick boats, dump scows and other equipment to Cape Lookout; this work for their Government contract (noted awarded in Feb.) to construct breakwater at Cape Lookout; begin placing stone by June 1; contract includes breakwater and shore connection to extent of authorized funds, \$1,260,000. As heretofore mentioned, breakwater to be 7000 ft. long; deposited in water up to 42 ft. deep; specifications estimate 1,221,700 tons stone for breakwater and 3900 tons for shore connection. In this connection, Board of Engrs. has approved contract at about \$7000 to Rickards Dredging Co., 806 Real Estate Trust Bldg., Philadelphia, Pa., and Rickards Co. advises: "Dredging in waterway Pamlico Sounds to Beaufort Inlet, in harbor at Beaufort, and in waterway connecting Core Sounds and Beaufort harbor, for U. S.; widening embankment along south side Norfolk Southern R. R. at Morehead City, for D. L. Taylor & Co." Harris Granite Quarry Co., Salisbury, N. C., is developing the quarry at Neverson and has Government contract to furnish 30 carloads (40 tons each) stone daily for 4 yrs.; has purchased 60 acres for quarry and plant; ordered 10 large derricks; is building dwellings for 100 workmen.

Tenn., Chattanooga—Wharf and Terminals.—City will petition Legislature for authority to issue \$100,000 bonds for municipal wharf and river terminals; Robt. Hooke, City Engr.

Tenn., Memphis—Wading Pool.—Park Com. let contract M. Larkin & Co. to construct wading pool in Forrest Park.

Tenn., Memphis—Levee.—Government will construct 4,500,000 cu. yds. levee work in Upper and Lower St. Francis and White River Levee Dist.; Mississippi River Com., First and Second Divs., Room 20 Customhouse, Memphis, receives bids until May 26; E. M. Markham, Maj., Engrs. (See Machinery Wanted.)

Tex., Dallas—Lake.—Dallas Automobile Country Club will construct dam across Junius Creek, forming lake to cover 10

acres; cost \$25,000 to \$35,000; improvements to include playgrounds, bathhouses, etc.

Va., Hampton—Trestles.—Newport News & Hampton Ry., Gas & Electric Co., B. J. Megginson, Supt., is repairing trestles by own force. (Lately noted.)

MISCELLANEOUS ENTERPRISES

Ala., Decatur—Grain Elevator.—Lynnville Mill & Elevator Co. is considering plans for rebuilding grain elevator and flour mill lately noted burned at estimated loss of \$100,000; temporary office with Decatur Ice & Coal Co.

Fla., Daytona—Printing Plant.—Daytona-Halifax Journal will erect building; 2 stories; 26x75 ft.; concrete blocks; pressed brick and plate-glass front.

Fla., Eustis—Publishing.—Eustis Lake Region let contract Davis & Dyer to erect building; 66x80 ft.; cost \$5000.

Fla., Pensacola—Builders' and Contractors' Supplies.—Contractors & Builders' Supply Co., P. O. Box 578, organized; will establish offices for direct representation of manufacturers of builders and contractors; prepared to correspond with those classes of manufacturers. (See Machinery Wanted.)

Fla., Tallahassee—Publishing.—Florida Record Publishing Co., capital stock \$5000, incorporated; T. J. Appleyard, Pres.; Geo. R. Miller, Secy.-Treas.; J. P. Clarkson, Mgr.

Fla., Tampa—Publishing.—Sunrise Publishing Co., capital \$5000, inceptd.; J. Fred De Berry, Pres.-Treas.; Joe D. Hanna, V.-P.; N. H. Harrison, Secy.; publishes "Weekly Sunrise."

Fla., Watertown.—North Florida Dairy Farm organized with A. G. Withee (of East Coast Lumber Co.) Pres., now registered at Hotel Mason, Jacksonville; R. R. Lake, V.-P., and Geo. E. Lake, Secy.-Treas., both of Chicago; will establish dairy farm, comprising about 500 acres, and representing investment of \$50,000; later also plans to establish chicken farm; will erect barn with concrete walls, floors, stalls and silos; milk-houses of concrete with tile interior finish; install mechanical milking devices, milk-cooling apparatus, etc.

Ga., Augusta—Amusement Resort.—W. E. McLenon and John C. May will develop Lake View Park as amusement resort; plans include erection of bathhouse with 100 apartments, skating rink, bowling alley, etc.

Ga., Macon—Printing.—Macon Printing Co., capital stock \$2000, inceptd. by Albert Johnson, Alva G. Hightower and Walter S. Lane.

Ga., Raymond.—Raymond Industrial Club, J. E. Gilbert, Secy., is interested in plan to establish dairy, including icehouse for cooling.

Ga., Savannah—Electrical.—Electric Construction & Fixture Co., capital \$5000, inceptd. by W. M. Colledge, R. F. Smallwood and A. B. Connor.

Ky., Maysville—Incinerator.—City contemplates building incinerator. Address The Mayor.

La., New Orleans—Grain Elevator.—Dock Board has plans by Bacon, Ford & Davis, Engrs., for grain elevator to be built on river front; concrete reinforced with steel; fireproof; capacity 1,000,000 bus. grain.

Miss., Meridian—Laundry.—Sam Wiener, Jr., Shreveport, La., purchased 3-story brick and 1-story brick buildings; will remodel for laundry.

Miss., Jackson—Dry Cleaning.—Jackson Dry Cleaning Co., capital \$10,000, inceptd. by Chas. Robb, John T. Reeves, H. S. Williams and Geo. B. Power.

Mo., Joplin—Incinerator.—City will vote May 18 on \$12,500 bonds to construct lately noted incinerator; Dr. R. D. Hill, Health Commr., in charge of details. If bonds are voted.

Mo., Kansas City—Heating.—Excelsior Heating Co., capital \$2000, inceptd. by Thos. H. Priest, John H. Felig and Stewart Taylor.

Mo., Kansas City—Publishing.—Kansas City Freeman Publishing Co., capital \$5000, inceptd. by John T. Jenkins, Leonard H. Baker and Hubert H. Mathonet.

Mo., St. Joseph—Construction.—Van Hafften Construction Co., capital \$10,000, inceptd. by A. W. Van Hafften, A. W. Thurman and C. B. Anderson.

Okla., Enid—Grain Elevator.—Enid Mill & Elevator Co. will build grain elevator.

Okla., Oklahoma City—Laundry.—Capital Laundry Co., capital stock \$1500, inceptd. by Chas. Pappas, T. B. McMinn and Gus Andrews.

S. C., Lugoff—Cattle.—Camden Beef Cattle Farms, capital stock \$10,000, inceptd.; L. T.

Guion, Pres.-Treas.; Henry Cunningham, Secy.

Tenn., Knoxville—Bottling.—Radium Water Co., capital stock \$10,000, inceptd. by W. C. Chandler, C. P. Price, J. B. Martin and others.

Tenn., Nashville—Stockyards.—Union Stockyards Co., Jas. E. Caldwell, Pres., will establish stockyards at 2d Ave. and Whiteside St.; daily capacity 175 carloads livestock; main building 2 stories, concrete, 276 ft. sq.; total estimated cost of buildings \$50,000 to \$100,000; plans by D. X. Murphy & Bro., Louisville, Ky.; bids until May 8. (Organization, etc., reported in Nov., 1914.)

Tenn., Spry—Grain Elevator.—Robertson County Farmers' Mill, Coal & Elevator Co. inceptd. by John S. Powell and others; will build grain elevator, etc. (See Flour, Feed and Meal Mills.)

Tex., Galveston—Grain Elevator.—Wesrodt Grain Co., August Wesrodt, Propr., 2601 Ave. A, will open proposals within 60 days to erect lately noted structures; 20x45-ft. elevator of 25,000 to 60,000 bus. capacity; warehouse 85x120 ft.; fireproof concrete construction; install machinery, including clipper, chop mill, separator, bean cleaner and coffee cleaner; open machinery bids in 60 to 90 days. (See Machinery Wanted.)

Tex., Houston—Printing.—M. E. Foster let contract G. C. Street, Jr., to erect 2-story building leased by Western Newspaper Union, W. M. Harper, Mgr., 1120 Franklin Ave.; 7000 sq. ft. floor space; install presses, typesetting machines and stereotype equipment; Archt., G. W. Collignon.

Tex., Pharr—Corn Elevator, etc.—McCracken Land Co., 307 Scanlan Bldg., will build corn elevator and mixed feed plant; bids until May 10; plans and specifications may be obtained at above office; Geo. E. Thomas, Trustee.

Tex., Victoria—Incinerator.—City will build incinerator; C. A. Wertheimer, City Secy., invites bids for plans, specifications and estimates until May 10; population 7000. (See Machinery Wanted.)

W. Va., Charleston—Laundry.—American Steam Laundry Co. (care of Young Bros.) contemplates erecting laundry and office building; 2 or 3 stories; 42x110 ft.; brick; fireproof; estimated cost \$35,000.

W. Va., Parkersburg—Printing Plant.—E. A. Brast and others, owners of Parkersburg State Journal, will erect 2-story brick building for printing plant on site 30x110 ft.

MISCELLANEOUS FACTORIES

Ark., Camden—Paints, Disinfectants, etc.—Ark-Ol Products Co. is constructing building; has purchased \$10,000 equipment to manufacture paints, disinfectants, soaps, fireproofing, waterproofing, fire-extinguisher material, stock oils, etc.; J. W. Crotty, Dallas, Tex., Pres. and Mgr.; John Holmes and G. W. Kimball, V.-Ps.; J. E. Newton, Secy.-Treas. (Previously noted inceptd. to install plant to manufacture lignite coal products.)

Ark., Little Rock—Chris. Ledwidge will erect frame factory at 820 Thayer Ave.; cost \$5000.

Fla., Tampa—Bottling.—Onirbos Co., capital stock \$200,000, inceptd.; Enrique Pendas, Pres.; Jose de la Campa, V.-P.; Lisardo Caras, Secy.; Celestino Rio, Treas.

Ga., Atlanta—Soap.—Swift Soap Works will remodel plant; cost \$25,000.

Ky., Clinton—Carbonating.—Clinton Carbonating Co. organized; Joe Spicer, Pres.; J. W. Lamkin, Secy.-Treas.; T. L. Brooch, Gen. Mgr.

Ky., Louisville—Films.—Children's Feature Film Co., capital stock \$50,000, inceptd. by Thos. J. Morrow, Jr., R. W. Conant and Norman M. Sweet.

Ky., Louisville—Medicine.—Bran-O-Tab Co., capital stock \$30,000, inceptd. by H. H. Chittenden, R. K. Walker and E. C. Koop.

Ky., Louisville—Tinning, etc.—Philip Fink & Son, 213 S. 1st St., have plans by Smith & Otis, 209 Norton Bldg., for factory (tinning, etc.) and warehouse; 1 story; 85x50 and 25x70 ft., respectively; brick; reinforced concrete; fireproof; tin roof.

Ky., Pineville—Ice-cream, etc.—Pineville Cream Co. organized by G. M. Asher (Propr. Beechwood Dairy) and T. H. Davidson; erecting brick building; install pasteurizing equipment, ice-cream plant and creamery.

La., New Orleans—Coffee, etc.—Rely-Taylor Co., W. B. Rely, Sr., Pres., and W. B. Rely, Jr., Secy., 640 Magazine St., will erect 60x88-ft. reinforced concrete fireproof building; plans by O. P. Mohr, 210 Machea Bldg., New Orleans; M. E. Levy, Asso. Archt., New York; products of plant, coffee,

tens, spices; architect is interested in flat-ceiling construction, also coffee-roasting machinery. (See Machinery Wanted.)

La., Palmetto—Moss Gin.—Palmetto Moss Gin Co., Ltd., inceptd.; Wm. Fitzmaurice, Pres.; A. A. Richard, Gen. Mgr.; Jake Meyer, Secy.-Treas.

Md., Baltimore—Macaroni.—Savarese Macaroni Co., 9th and Baltimore Sts., has plans by Geo. R. Callis, Jr., 55 Knickerbocker Bldg., Baltimore, for addition to plant; 200x128 ft.; slow-burning construction; slag roof; electric light; cost about \$50,000.

Md., Baltimore—Potash, etc.—United States Potash Co., Samuel Morrison, Pres., 321 St. Paul St., plans to use Swayze patent for extracting potash, alumina and silica from feldspar; proposes locating plant on tide-water and railway; build single unit and increase to 10 units; probably equip initial plant for daily capacity 30 tons feldspar rock; Daniel B. Banks, Engr., Maryland Savings Bank Bldg., Baltimore. (Lately noted inceptd. with \$250,000 capital stock, etc.)

Md., McCoole, P. O. at Dawson—Food Products.—Food Products Mfg. Co. inceptd. by C. L. Wiseman of McCoole, J. F. Richards of Luke, Md.; W. C. Bowden, I. W. Iser, T. H. Frankhouser and others, all of Keyser, W. Va.

Miss., Biloxi—Films.—Dixie Film Mfg. Co. let contract Irvine & Son of Ocean Springs, Miss., to build film studio at Sunkist.

Miss., Biloxi—Cigars.—D. A. Gallagher of D. A. Gallagher Tobacco Co. of Lancaster, Pa., is reported as contemplating establishment of cigar factory.

Mo., Kansas City—Bakery.—Campbell Baking Co. (W. Campbell), Wichita, Kans., let contract Fogel Construction Co., 516 Reliance Bldg., Kansas City, for bakery; 2 and 3 stories; 132x150 ft.; brick, stone and terra-cotta; cost \$40,000; plans by N. T. Vorse, 811 S. & L. Bldg., Des Moines, Iowa.

Mo., Kansas City—Mops.—Burdette Mfg. Co., Burdette Bldg., J. C. Gosnell, Pres., 1414 E. 9th St., is having plans prepared by F. C. Gunn, 1107 Republic Bldg., for mop factory; 2½ stories; 140x140 ft.; brick; stone trimmings; reinforced concrete and mill construction; tar and gravel roof. (Previously noted.)

Mo., Kansas City—Awnings, Tents, etc.—E. P. and J. F. Moriarty will erect building at Grand Ave. and Robert Gillham Rd.; 6 stories; 70x117 ft.; reinforced concrete; brick and terra-cotta exterior; estimated cost, \$100,000; plans by McKecknie & Trask; Carnie-Gouldie Mfg. Co. to occupy 3 upper floors and east 40 ft. of balance of building for manufacturing awnings and tents.

Mo., St. Joseph—Beds and Couches.—E. J. Robinson Adjustable Bed & Sanitary Couch Manufacturing Co., capital \$100,000, inceptd. by E. J. Robinson, Perry Ennycart and A. H. Mitchell.

Mo., St. Louis—Garments.—Royal Garment Co., capital stock \$10,000, inceptd. by Oscar O. Milentz, Jerome M. Tuholske and John T. Sackmann.

Mo., St. Louis—Clothing.—Kline Apparel Co., capital \$100,000, inceptd. by E. B. Kline, Isaac D. Kline, Solomon Kline and others.

Mo., St. Louis—Piston Rings, etc.—Ballman-Whitten Mfg. Co., 5407 Easton Ave., capital stock \$10,000, inceptd.; E. C. Ballman, Pres.; Stahl A. Whitten, V.-P. and Treas.; E. Doerr, Secy.; will install lathes and boring machines; manufacture piston rings.

Mo., St. Louis—Macaroni.—Viviano & Bros. Macaroni Mfg. Co., 1022 N. 7th St., will build macaroni factory at 7th and Carr Sts.; 6 stories; 30x60 ft.; pressed brick; concrete; composition roof; structural steel; skylights; also erect 2-story addition to present 4-story building; 120x140 ft.; pressed brick; concrete; structural steel; composition roof; skylights; Archt., O. R. S. Traber, Fullerton Bldg.

N. C., Andrews—Bottling.—Andrews Pepsi-Cola Bottling Co. inceptd.; will build plant to have daily capacity 12,000 bottles; R. E. Carmichael, Pres.; H. K. Cook, V.-P.; Chester Brown, Secy.-Treas.; Chas. F. Aiken, Mgr.

N. C., Fayetteville—Bottling.—Chero-Cola Bottling Co. (lately noted inceptd., capital stock \$20,000) will manufacture soft drinks; machinery installed; F. B. Hammond, Pres.; E. D. Wooten, V.-P.; L. L. Wooten, Secy. and Mgr.

N. C., Lumberton—Thermometers, etc.—Jordan Mfg. Co., capital stock \$50,000, inceptd. by L. B. Blackburn of Lumberton, T. B. Jordan of Kelly and B. W. Jordan of Valdosta, Ga.; asks prices on thermometer parts, also on machinery. (See Machinery Wanted.)

N. C., Wilmington—Ice-Cream.—Frost Ice-Cream Co. organized by Geo. L. Farmer and

L. P. Mathews to operate ice-cream factory at 13 Princess St.; daily capacity 1000 gals.

N. C. Winston-Salem—Coffee.—Purity Coffee Co., capital stock \$50,000, will be inceptd. by J. D. Long, W. A. Lemly, A. E. Holton and S. F. Vance; secured building at 6th and Chestnut Sts.; will install coffee-roasting plant with daily capacity 450 lbs.

Oklahoma—Ardmore—Stock Feed.—Morris Sassa will rent building and install 4 H. P. gas-line power cane mill complete to manufacture sorghum syrup; daily capacity 300 gals. during season; also install small feed mill; these installations being experimental to test value of cane pumice mixed with oats, maize, alfalfa, cottonseed hulls and meal, etc. for stock ration.

Oklahoma—Cushing—Creamery, etc.—White Mfg. Co., corner Cleveland and Cherry Aves., is having plans prepared by L. G. New, Cushing, for 3-story 75x65-ft. brick building, with 1-story 25x40-ft. addition; stone trimmings; concrete foundation; for creamery, laundry and bottling works; new laundry equipment to be installed.

S. C. Columbia—Granite.—Columbia Granite Co. organized by Columbia Ry., Gas & Electric Co., Edwin W. Robertson, Prest.; will build plant to finish granite shipped from quarries at Rion; will manufacture monuments, building blocks, coping, etc.

S. C. Conway—Bottling.—Conway Coca-Cola Bottling Co., capital stock \$3000, inceptd. by W. R. Lewis, E. T. Lewis and others.

S. C. Spartanburg—Bakery.—New York Bakery, capital \$1000, inceptd. by C. J. Brede and Wm. P. Brede.

Tenn. Knoxville—Shoes.—Heneger-Dooley Shoe Co., capital stock \$100,000, inceptd. by Edgar Heneger, I. E. Dooley, L. W. Holmes and others.

Tenn. Memphis—Chemicals.—Webster-Warneck Chemical Co. increased capital stock from \$150,000 to \$300,000.

Tenn. South Pittsburg—Brooms.—D. Y. Conatser is reported as contemplating establishment of broom factory.

Tex. Crockett—Bottling.—Crockett Bottling Co., capital stock \$5000, inceptd. by W. A. R. French, G. Q. King and H. F. Moore.

Tex. Houston—Candy.—Southern Candy Co., capital stock \$6000, inceptd. by W. H. Gohlman, L. L. Flaxman and John F. Cole.

Tex. Sugarland—Sugar Refinery.—Imperial Sugar Co. let contract Phillips Co., Chicago, to install sprinkler equipment for refinery; estimated cost, \$50,000; equipment will require 2 mi. of underground water mains and about 10,000 sprinkler heads.

Tex. Taylor.—City voted \$100,000 bonds to pave streets. Address The Mayor. (Lately noted.)

Va. Middleburg—Lime.—Goose Creek Lime Works, capital stock \$25,000, inceptd.; D. C. Sands, Jr., Prest.; Otto Furr, Secy.

Va. Petersburg—Distillery.—Silver Distilling & Distributing Co., capital \$5000, inceptd.; P. H. Wells, Prest.; M. A. Finn, V.-P.; E. E. Magee, Secy.-Treas.

Va. Richmond—Adding Machine.—Ray Subtractor-Adder Co., capital \$100,000, inceptd.; E. S. Simpson, Prest. and Treas., Richmond; Walter T. Ray, V.-P. and Gen. Mgr., Virginia Beach, Va.; Raymond E. Dudley, Secy.; plans not ready for announcement.

W. Va. Charleston—Ice-Cream.—Kanawha Velvet Ice-Cream Co., Mr. Aurady, Gen. Mgr., will have plans prepared by C. D. Cooley Co., 9th floor Century Bldg., Pittsburgh, Pa., for ice-cream plant.

W. Va. Huntington—Brooms.—Huntington Broom Mfg. Co. (lately noted inceptd.) will manufacture brooms; daily capacity about 30 doz.; contemplates manufacturing mops; J. W. Hannan, Prest.-Mgr.; T. W. Hannan, V.-P.; H. V. Weathers, Secy.; Lon H. Savages, Treas. (See Machinery Wanted.)

W. Va. Parkersburg—Automobile Fenders.—American Automatic Save-a-Life Fender Co., capital stock \$250,000, inceptd. by W. M. Miller, L. G. Pritchard and others.

MOTORS AND GARAGES

Ky., Louisville—Garage.—Dr. J. T. Windell, 10 Reeser Pl., has plans by Meyer & Brenner, 824 Paul Jones Bldg., for garage and boiler-house; 2 stories; brick; reinforced concrete; fireproof.

Ky., Louisville—Garage.—Breux Ballard has plans by Meyer & Brenner, 824 Paul Jones Bldg., for garage.

Md., Baltimore—Garage.—John D. Baker, 1637 W. Lexington St., is reported to erect garage on Vincent St. near Saratoga St.; 45x57-ft. site.

Mo., Kansas City—Garage.—H. R. Ennis Co., Republic Bldg., has plans by Edgar C. Paris, 304 Shukert Bldg., for garage.

Mo., St. Louis—Garage.—C. R. Mestor is having plans prepared by L. Ewald, Security Bldg., for garage; 1 story; 38x38 ft.; pressed brick and concrete; composition roof.

N. C., Salisbury—Garage.—Murphy Estate, W. T. Rainey, Agt., will erect addition to Rouzer Garage; 120x56 ft.; brick; metal roof; concrete floor; contract let to John Komerly.

Oklahoma, Tulsa—Automobiles.—Federal Motor Co., capital \$3000, inceptd. by H. H. Gries, E. A. Ross and W. H. Hendee of Pecosett, Okla.

Oklahoma, Tulsa—Garage.—Mrs. J. H. Walsh let general contract to Lattimer Construction Co. to erect garage; cost \$12,000; J. H. Hughes, Contr. for masonry; Curtis Co. for heating and plumbing.

S. C., Chester—Garage.—John Frazer, Sr., will erect brick building to be occupied as garage by C. B. Fennell.

Tenn., Nashville—Automobile Line.—Dixie Transit Co., capital \$2000, inceptd. by Fred Holmes, Grover C. Powell, F. M. Drake and others.

Tex., Dallas—Automobile Line.—Lakewood Motor Co., 1521 Commerce St., organized to operate motor bus line; S. Raitman, Prest.; H. A. McDougle, V.-P.; W. O. Furgason, Secy., Treas. and Mgr. (Lately noted inceptd., capital stock \$1500.)

Va., Charlottesville—Garage.—Charlottesville & Albemarle Ry. Co. will erect building for garage, substation and office. (See Electric Plants.)

Va., Richmond—Garage.—Mrs. Dorothy L. Antrun has plans by Albert F. Hult, 1107½ E. Main St. for garage; two stories; 28x19 ft.; cost \$4000.

Va., Richmond—Garage.—D. Wille Anderson, 920 E. Main St., is preparing plans for garage; 2 stories; 60x20 ft.; cost \$15,000.

Va., Richmond—Garage.—W. E. Dibrell let contract Geo. D. Pruddy, 1801 W. Marshall St., to erect garage; 2 stories; 28x20 ft.; cost \$1000; Archt., Wm. C. West, Merchants' National Bank Bldg.

Va., Richmond—Garage.—Jos. Bryan estate, Times-Dispatch Bldg., let contract J. T. Wilson Co., Municipal Bldg., to erect garage; 1 story; 40x23 ft.; cost \$9000; Archt., C. W. Isbell, Mutual Bldg.

Va., Richmond—Automobile Supplies, etc. Talman Auto Supply Co., 629 E. Main St. (lately noted inceptd., capital \$20,000), will deal in auto supplies and accessories; D. T. Talman, Prest. and Mgr.; R. W. Payne, V.-P.; N. E. Pate, Secy.; Percy Holladay, Treas.

Va., Roanoke—Automobile Line.—Roanoke Jitney Bus Co., capital \$50,000, inceptd.; W. N. Doak, Prest.; W. M. Shickle, V.-P.; K. H. Willis, Secy.-Treas.

Va., Roanoke—Automobiles.—Virginian Auto Transfer Corp., Virginian Ry. Freight Station, capital \$25,000, chartered; E. T. Fisher, Prest.; P. D. Fisher, V.-P.; J. M. Reynolds, Secy. and Treas.

W. Va., Charleston—Garage.—Chas. Middelburg let general contract Central Engineering Co. to build garage; 1 story; 50x300 ft.; brick; Moss Iron Works, Wheeling, has contract for structural steel.

RAILWAY SHOPS, TERMINALS, ROUNDHOUSES, ETC.

N. C., Raleigh.—Norfolk Southern R. R. Co., F. L. Nicholson, Ch. Engr., Norfolk, Va., has made preparation to erect lately-noted shops; plain frame structures, 40 to 60 ft., covered on outside with galvanized iron; nearly completed.

ROAD AND STREET WORK

Ala., Birmingham.—City will construct macadam paving, curb and gutter and sidewalks on 29th between 1st and 5th Aves.; estimated cost \$5000; bids until May 4; Julian Kendrick, City Engr. (See Machinery Wanted.)

Ala., Birmingham.—Board of Comms. let contract Southern Bitulithic Co., Birmingham, for asphalt paving on 12th Ave. N. and 33d St., cost \$1500; Paul Richter, Birmingham, contract for grading, macadamizing, curb and gutter and sidewalk paving on 28th St. between 23d and 25th Aves., Ensley, cost \$3315, including 6500 yds. excavation, 1400 lin. ft. combined curb and gutter, 700 sq. yds. cement walk and 250 cu. yds. chert; H. N. Bowdry, Empire Bldg., Birmingham, for grading, macadamizing, curbing, gutters and sidewalk paving on Alabama Ave. from 16th St. S. W. to 14th St. S. W., estimated cost \$5060, including 2200 cu. yds. excavation, 1200 cu. yds. slag, 800 cu. yds. chert, 2500 lin.

ft. cement curb and gutter, 1500 sq. yds. cement walk, etc.; Geo. Fromhold, Birmingham, for grading, macadamizing, curbing, gutters and sidewalk paving on 14th Ave. N. between 24th and 26th Sts., and on 30th St., Ensley, between Ensley Ave. and Ave. R., cost \$5000, including 4000 cu. yds. excavation, 2000 sq. yds. cement sidewalk, 3900 lin. ft. cement curb and gutter, 250 sq. yds. brick alley paving, 550 cu. yds. slag and 550 cu. yds. chert; Julian Kendrick, City Engr. (Previously noted.)

Ala., Evergreen.—Conecuh County Comms., will grade, drain and surface with sand-clay portion of Evergreen and Andalusia Rd. and of Evergreen and Bellville Rd.; expenditure \$11,158.50; bids until May 24; W. S. Keller, State Highway Engr., Montgomery. (See Machinery Wanted.)

Ala., Haynesville.—Lowndes County Commissioners will grade, drain and surface with gravel part of Selma and Montgomery Rd. near Benton; expenditure \$4616.26; receive bids until May 31; W. S. Keller, State Highway Engr., Montgomery. (See Machinery Wanted.)

Ala., Montgomery.—Montgomery County Comms. will gravel about 2 mi. Carter Hill Rd.; bids until May 19; also until same date to furnish 5000 cu. yds. gravel; Thos. H. Edwards, County Engr. (See Machinery Wanted.)

Ark., Pocahontas.—Randolph County Road Improvement Dist. No. 1 will construct road from Ravenden to Ravenden Springs, 8 mi.; J. B. Duvall and others, Comms.

Ala., Rockford.—Coosa County Comms. let contract Nixon-Smith Construction Co., Deatsville, Ala., to grade, drain and surface with topsoil 2½ mi. of Rockford and Keleton Rd.; expenditure \$4616.26; S. E. Fitch of Opelika is Engr.; W. S. Keller, State Highway Engr., Montgomery. (Call for bids lately noted.)

Ark., Dermott.—City let contract W. A. Prather to construct sidewalks, curb and gutter; \$30,000 available; Engr., E. A. Kingsley, Little Rock, Ark.; Henry Bordeaux, Secy. of Com. (Lately noted.)

Ark., Pine Bluff.—Jefferson County Road Improvement Dist. No. 7 will construct 18 mi. road at cost of about \$100,000, according to estimates of Hugh Carter, State Highway Engr.; road will extend from Pine Bluff to Lincoln county line.

Fla., Gulfport.—City let contract to Gulfport Cement Works, Gulfport, for 19,000 sq. ft. pavement.

Fla., Tavares.—Comms. Dist. No. 4, M. V. Simpson, Commr., Mt. Dora, Fla., rejected bids and will readvertise bids to surface about 20 mi. road with 4 in. clay and 2½ in. asphalt.

Fla., Winter Haven.—City votes May 6 on \$10,000 bonds to hard-surface streets; total expenditure, including property owners' share, about \$18,000. Address The Mayor.

Ga., Quitman.—Brooks county votes May 29 on \$400,000 bonds to construct roads. Address County Comms.

Ga., Rome.—City will construct combined concrete curb and gutters and concrete sidewalks as may be ordered during fiscal year ending Apr. 1, 1916; bids until May 6; W. M. Gammon, First Commr.; Hugh McCrary, Secy. (See Machinery Wanted.)

Ky., Catlettsburg.—Boyd county defeated \$500,000 bonds to construct roads. J. H. Wade, County Judge. (Lately noted.)

Ky., Grayson.—Carter county defeated \$150,000 bonds to construct roads; K. M. Bagby, Secy. County Comms. (Noted in Feb.)

Ky., New Castle.—Henry County Fiscal Court ordered reconstruction of road between New Castle and Eminence, 3¼ mi.; estimated cost, \$14,000.

La., Abbeville.—Vermilion parish let contract Schackelford & Co., Bayou Sara, La., to construct 9 mi. road; \$50,000 available; W. B. Knox, Parish Highway Engr. (Bids lately noted.)

La., Alexandria.—City will pave with vertical fiber vitrified brick Bolton Ave. from Gould Ave. to Lee St. and Lee St. from 2d St. to Bolton Ave.; bids until May 19; Sol Weil, City Secy. (See Machinery Wanted.)

La., Baton Rouge.—City postponed date of receiving bids for street paving from May 15 to June 20; furnish new specifications on application; John J. Muddlger, City Engr.; work lately noted to include about 170,000 sq. yds. pavement, with curb and gutter, also about 22,000 sq. yds. pavement. (See Machinery Wanted.)

La., Convent.—St. James parish voted \$300,000 bonds to improve and construct gravel roads. Address Police Jury.

La., Mandeville.—City let contract T. M. Thornton to pave streets.

La., Thibodeaux.—La Fourche Parish Road Dist. No. 2 voted \$80,000 bonds to construct about 29 mi. hard-surface road on east bank of Bayou La Fourche from Theriot Canal, near Raceland, to upper end of parish; date of opening bids not set; J. L. Basset, Prest., Police Jury.

Md., Betterton.—City, A. H. Supple, Secy. of Comms., will construct about 2500 lin. ft. concrete sidewalks and necessary grading; bids until May 15; Kastenhuber & Anderson, Engrs., Easton, Md. (See Machinery Wanted.)

Md., Baltimore.—State Roads Com., Garrett Bldg., let contracts calling for application of total of 1,231,000 gals. of oil to highways constructed under its supervision; Contract No. 1, United Gas Improvement Co., Philadelphia, Pa., at \$969.50, 150,000 gals. oil to roads in Salisbury residency, consisting of Worcester, Somerset, Wicomico, Dorchester and Caroline counties; Contract No. 2, Atlantic Refining Co., Philadelphia, Pa., at \$708.56, 156,000 gals. oil to roads in Chester-town residency, consisting of Talbot, Kent, Queen Anne's and Cecil counties; Contract No. 3, Good Roads Co., 212 Keyser Bldg., Baltimore, at \$15,600, 238,000 gals. oil to roads in Baltimore residency, consisting of Baltimore and Harford counties; Contract No. 4, Good Roads Co., 212 Keyser Bldg., Baltimore, at \$12,932, 225,000 gals. oil to roads in Frederick residency, consisting of Frederick, Carroll and Howard counties; Contract No. 5, Sands-Kline Co., Morristown, N. J., at \$14,700, 202,000 gals. oil to roads in Cumberland residency, consisting of Washington, Allegany and Garrett counties; Contract No. 6, Barrett Mfg. Co., Philadelphia, Pa., and Headley Good Roads Co., 30th and Spruce Sts., Philadelphia, Pa., at \$11,300, 175,000 gals. oil to roads in Hyattsville residency, consisting of Montgomery county, Washington and Annapolis Bldgs.; Contract No. 7, Barrett Mfg. Co., Philadelphia, Pa., at \$579.11, 85,000 gals. oil to roads in La Plata residency, consisting of Charles, St. Mary's and Prince George's counties.

Md., Baltimore.—State Roads Com., Garrett Bldg., let following contracts: Garrett county, Oakland to Thayersville, resurfacing, H. W. Kaylor, Hagerstown, Md., at \$7450.40; Baltimore city, pave Frederick Ave. bridge over Gwynn's Falls, American Paving Contracting Co., Montebello Ave. and Jenkins La., Baltimore, at \$15,629.44; Annapolis Blvd., Baltimore & Offie R. R. to Harmon's bridge, along Bush, Russell and Ridgely Sts., American Paving Contracting Co., at \$37,521.80; Howard county, section of boulevard through Elkridge, concrete, E. Ward Brown, Port Deposit, Md., at \$5110.70.

Md., Baltimore.—City let contract Slack & Slack, York Rd. and 26th St., at \$38,426 to pave German St. from Eutaw to South St. with granite and wood blocks; R. Keith Compton, Chrmn. Paving Com. (Call for bids lately noted.)

Md., Towson.—Baltimore County Comms. will improve ½ mi. of Malvern Ave., 9th Dist., with macadam; 1 mi. Bellona Ave., 9th Dist., with concrete (between Riderwood and Ruxton); Chesapeake Ave., 9th Dist., concrete roadway (from Washington Ave. to York Rd.); grade Register Ave., 9th Dist., about 3500 cu. yds.; grade Dolfeld Rd., 4th Dist., about 3800 cu. yds.; bids until May 13; Chas. J. Fox, Chief Clerk; W. G. Suco, Roads Engr. (See Machinery Wanted.)

Miss., Charleston.—Tallahatchie Supvrs.' Dist. No. 2 defeated \$25,000 bonds to construct roads. (Lately noted.)

Miss., Corinth.—City will pave 13 blocks in business section. Address The Mayor.

Mo., Blue Springs.—City defeated \$10,000 bonds to improve streets. (Lately noted.)

Mo., Kansas City.—Mid-Continent Exposition Club, W. A. Rule, Secy., 4079 Republic Bldg., will construct 2 mi. creosoted wood-block automobile speedway and 1 mi. dirt racetrack.

Mo., St. Joseph.—Board of Public Works, Fred M. Landers, Secy., let following contracts for street paving: Dubois & Peters, at \$6131.85, to pave Antonio St. and Prospect Ave.; A. M. Haffter, at \$8352.10, to pave Augusta, Antonio and Poulin Sts.; Olson & Schmidt, at \$7613, to pave ½ mi. Garfield Ave. with coal-tar macadam; C. P. Hoss, City Engr.

N. C., Bryson City.—Swain County Highway Comms. will grade about 8 mi. highway; bids until May 19; T. M. Howerton, Engr., Bryson City. (See Machinery Wanted.)

N. C., Marshall.—Madison County Highway Com. will grade and drain about 1.7 mi. road; bids until May 25; J. B. Clingham, County Road Engr. (See Machinery Wanted.)

Tenn., Clarksville.—Montgomery county let contract Blackford & Jones, Cunningham, Tenn., to construct gravel surface roads; 890 cu. yds. earth; 2500 cu. yds. gravel; \$20,000 available; D. T. Foust, Engr. (Bids lately noted.)

Tenn., Waverly.—Humphreys county, J. M. Moody, County Judge, voted lately noted \$250,000 bonds to construct roads.

Tex., Angleton.—Brazoria County Road Dist. No. 6 will construct about 30 mi. hard-surfaced road, including grading, bridging and paving; Comms. of Dist. receive bids at office J. H. Dawson, Engr., Alvin, Tex., until May 10; lately noted to issue \$150,000 bonds. (See Machinery Wanted.)

Tex., Angleton.—Brazoria County Road Dist. No. 8 let contract to Austin & Hudgins (D. T. Austin and S. H. Hudgins), Velasco, Tex., for construction lately noted as let to D. T. Austin; 12 mi. hard-surfaced graveled road; total contract price \$64,000; contract approved by County Comms. Apr. 26 and construction begun.

Tex., Dallas.—City let contract Municipal Paving Co., 521 Slaughter Bldg., Dallas, at \$5000 for lately noted resurfacing old asphalt pavement.

Tex., Dallas.—City Comms. let contract Standard Engineering Co. to pave Penobscot Ave. from Oakland Ave. to Texas & Pacific R. R. at \$15,414 for paving and \$3303.94 for storm sewer; same company to pave Birmingham Ave. from Oakland Ave. to Meadow St. at \$11,108; to Texas Bitulithic Co. at \$1621 for paving on Lancaster St. at 10th and Jefferson Sts.

Tex., Houston.—City will construct standard concrete gutters on Stratford St. from Baldwin to Taft St.; bids at office City Secy. until May 10; Ben Campbell, Mayor. (See Machinery Wanted.)

Tex., Slaton.—City will pave sidewalks in business and residence districts. Address The Mayor.

Va., Culpeper.—Culpeper County, Cedar Mountain Dist., will vote May 29 on \$100,000 bonds for macadam roads; W. E. Evans, County Clerk; Dist. officers, W. H. Egghorn, Egghornville, Va., in charge, are proceeding with construction (no bids) of 10-mi. macadam road in Salem Dist., having \$36,000 available.

Va., Lynchburg.—City will improve 2d and 3d Sts. from Madison to Harrison St.; Jackson St. from 5th, one-half block toward 4th St.; 11th St. from Floyd to Buchanan St. and Poplar St. from Maple to Turnpike St.; 1200 cu. yds. excavation, 300 cu. yds. trench excavation, 4300 sq. yds. granite rubble paving, 2900 lin. ft. stone curb and 400 lin. ft. sewer pipe; Joint Council Committee on Streets and Sewers receives bids at office of H. L. Shaner, City Engr., until May 6. (See Machinery Wanted.)

W. Va., Clarksburg.—Harrison County Comms. will construct hard-surface roads; \$80,000 available; C. C. Fittro, Engr.

W. Va., Fairmont.—Marion County Comms., Mannington Dist., will expend residue of \$300,000 to complete brick, concrete and bituminous roads begun last season; J. R. Wilson, Engr.

W. Va., Fairmont.—Marion County Comms., Fairmont Dist., Chaney & Armstrong, Engrs., will expend residue of \$400,000 bonds and vote on \$100,000 additional bonds to complete brick, bituminous and concrete roads.

W. Va., Falling Spring, P. O. at Renick.—City, J. P. Smith, Mayor, voted \$4500 bonds for street improvements.

W. Va., Moundsville.—Marshall county will grade and macadamize Fairmont Pike extending \$50,000; grade portion Reilly Hill Rd.; grade and macadamize portion of Boggs Run Hill Rd.; all in Union Dist.; J. E. Chase, Clerk County Court, receives bids until May 28; T. J. Bartrug, Engr., Alexander Bldg., Moundsville. (See Machinery Wanted.)

W. Va., New Martinsville.—Wetzel county will construct 2 sections dirt road in Grant Dist.; uncompleted portion of road on South Fork at Archer Station, consisting of excavation and fill, and road from Smithfield to railroad crossing east of Folsom; bids until May 14; Blake Taylor, Special Road Engr., Jacksonburg, W. Va.; W. T. Francis, Commr. and Road Commr. (See Machinery Wanted.)

W. Va., New Cumberland.—Hancock County Comms. will expend about \$40,000 on brick road construction; C. E. Grafton, Engr., New Cumberland.

W. Va., Parsons.—Tucker County Comms. constructing earth roads to connect with Randolph county; W. E. Weimer, Davis, Engr.

W. Va., Pineville.—Wyoming County Comms. contemplate road improvements.

W. Va., St. Marys.—Pleasant County Comms., Washington Dist., will expend \$30,000 completing concrete roads begun one year ago.

W. Va., Wellsburg.—Brooke county, Geo. C. Wells, Commr., is having map made of county roads, map to be completed about June 1; contemplates (about) \$500,000 bond issue in fall.

W. Va., Wheeling.—Ohio County Comms. will expend (from county fund) \$165,000 on resurfacing and constructing new roads; Geo. W. Steenrod, Engr., Wheeling.

SEWER CONSTRUCTION

Ala., Birmingham.—City let contract to H. N. Bowdry, Empire Bldg., Birmingham, to construct lately noted sanitary sewers in East Birmingham; cost \$5518; includes 12,000 lin. ft. 8-in. clay pipe, with bends, manholes, etc.; Julian Kendrick, City Engr.

Ala., Birmingham.—City will construct sanitary sewers near American Cast Iron Co.'s plant, North Birmingham; estimated cost \$13,000; bids until May 4; Julian Kendrick, City Engr. (See Machinery Wanted.)

Ala., Slocumb.—Slocumb Sanitary Sewer Co. organized with J. E. Cox, Pres., and C. E. Segrest, Secy., to construct sanitary sewer system.

Ark., Little Rock.—Comms. Sewer Dist. No. 78 let contract Merino, Brooks & Burkham of St. Louis at \$41,854.00 to construct 17,500 lin. ft. storm and sanitary sewers; Engrs. Ford & MacCrea, Gazette Bldg., Little Rock. (Call for bids lately noted.)

Ga., Macon.—City will let contract Dysard Construction Co. of Atlanta, Ga., at \$3196.24 to construct sanitary sewers from Vineville and Academy for Blind to Ocmulgee River; D. S. Jones, City Clerk. (Call for bids lately noted.)

Md., Baltimore.—City will construct lateral sewers and house connections in Dist. 46-A, Contract No. 153; 33,195 lin. ft. 8-in. and 10-in. sewer and 16,500 lin. ft. house connections; Board of Awards receives bids until May 12; Chas. England, Chrmn. Sewerage Com. (See Machinery Wanted.)

Md., Baltimore.—City let contract Carozza Bros. & Co., 605 Munsey Bldg., at \$92,239.04 to construct lateral sewers on North Ave. in vicinity of Maryland Ave. and Falls.

Mo., St. Louis.—Board of Public Service contemplates construction of relief sewer in Ferry St. Sewer Dist.; estimated cost, \$71,000.

Mo., St. Louis.—Mill Creek Joint Dist. tunnel work contracts are progressing; general contractor, Carter Construction Co., 42 Broadway, New York, assigned work to Norton, Head & Dennen, St. Louis, who sublet in four sections, as detailed in Oct., 1914; Brocklehurst & Potter Co., Marble Bridge Bldg., New York, is proceeding with its contract as follows: Tunnel 100 ft. under ground; solid rock work from 3 shafts; tunnel horse-shoe shape; 19½ ft. wide by 19½ ft. high; lined with concrete; Brocklehurst & Potter Co. section 6500 ft. long; 3000 ft. completed; tunnel driven; excavation material being crushed and sold for concrete and road-building work; entire completion by Dec. 1; total cost \$3,072,454.20.

N. C., Durham.—City will construct sewer outfall; about 1900 ft. 8-in. and 6000 ft. 12-in. sewer; bids until May 17; W. G. Bradshaw, Chrmn. Street Com. (See Machinery Wanted.)

Tex., Dallas.—City Comms. let contract Roach-Manigan Paving Co., Memphis, Tenn., at \$32,149.08 to construct Cedar Creek outfall and Cedar Creek overflow sewers, part of municipal sewage-disposal plant.

Tex., Galveston.—City will construct reinforced concrete drain along 37th St. from Ave. H to Ave. F; Board of Comms. invites bids until May 6; reserves right to extend drain to connection with present drain on 37th St. at terminus near south line of Ave. B; also construct concrete and vitrified pipe drains and sewers in alleys between Aves. C and E from 28th to 29th; City Comms. receive bids at office John D. Kelley, City Secy., until May 6; H. O. Sappington, Commr. of Streets and Public Property. (See Machinery Wanted.)

W. Va., Ravenswood.—City, Ira S. Bartlett, Mayor, will construct sanitary-sewer system, including about 3200 ft. 6-in. to 10,450 ft. 8-in., 1510 ft. 10-in. and 600 ft. 12-in. pipe, with house connections, branches, manholes, lampholes, etc.; bids until May 14; J. V. Dunbar, Engr. (See Machinery Wanted.)

TELEPHONE SYSTEMS

N. C., Southern Pines.—Inter-County Telephone Co., capital \$50,000, incptd. by B. W. Leavett of Southern Pines, Kate S. McIver of Sanford, C. P. Leavitt of Carthage and W. B. Buck of Meadowbrook, Pa.

TEXTILE MILLS

Ga., Raymond.—Kitt Goods.—Raymond Industrial Club, J. E. Gilbert, Secy., is interested in plan to establish knitting mill.

N. C., Zebulon.—Hosiery.—Zebulon Hosiery Mills (lately noted increasing capital by \$20,000) will build addition to dyerom and install bleaching plant.

Va., Newport News.—Cotton Cordage, etc. Southern Mills Corp., Oxford, Ala., is reported to build large plant for manufacturing cotton cordage, etc.; its Oxford mill has 3000 ring spindles, 175 braidings, 25 cards, etc.

WATER-POWER DEVELOPMENTS

Tex., Seguin.—Seguin Electric Light & Power Co., Owen A. Gafford, Mgr., will install following equipment in power plant: 187 K. V. A., 3-phase, 60-cycle, 2300-volt water-wheel type generator; exciter and switchboards; two 150 B. H. P. vertical water-wheels; transmission machinery, etc.; building and penstocks probably of concrete; preliminary engineering completed; probably invite bids in 30 or 40 days. (Lately noted under Electric Plants.)

Va., Clifton Forge.—Virginia Western Electric Co. contemplates building hydro-electric plant, 5 substations and 42 mi. 44,000-volt 3-phase transmission line; also plans to purchase 3 water-wheel governors and 3 600 K. V. A. generators, etc.; A. H. Grimsby, Ch. Engr.

WATER-WORKS

Ark., Little Rock.—Capital City Water Co., capital \$100,000, incptd. with C. J. Eld Prest, J. Merrick Moore V.-P., G. M. Gadaby Secy.-Treas.; is auxiliary of Arkansas Water Co. and will supply water to Little Rock and Pulaski Heights.

Fla., Plant City.—Board of Public Works, J. L. Young, Chrmn., has plans and specifications by J. B. McCrary Co., Atlanta, Ga., for water-works improvements, etc., lately noted; receives bids until May 15 for drilling and casing 12-in. well 300 ft. deep for 1000 gals. per minute, to furnish 35 tons cast-iron pipe, etc.; until June 5 for station equipment, 3 plans under consideration; plan No. 1 specifies 1,500,000 gal. pumping engine, 300 cu. ft. air compressor, 100 H. P. boiler, 200 H. P. feeder, feed pump and air lift; plans No. 2 and No. 3 not so extensive as No. 1; specifications and other information obtainable from E. W. Mays, Supt. Water-works. (See Machinery Wanted.)

Ky., Bardstown.—City let contract for filtering plant; cost \$2500. Address The Mayor.

La., Oberlin.—City is considering construction of water-works and electric-light plant; W. D. Stockwell, Mayor.

Mo., St. Louis.—Board of Public Service will construct water-pipe line from Chain of Rocks to Industrial School at Fort Bellefontaine.

N. C., Wilmington.—Oakdale Cemetery Co. will construct water-works; 2300 ft. 4-in. pipe; 2000 ft. 2 to 3-in. pipe; 12,900 ft. ¾-in. pipe; 220 garden hydrants, valves, valve boxes, etc.; Water-works Com., Walker Taylor, Chrmn., receives bids until May 15; J. L. Becton, Engr., Odd Fellows' Bldg., Wilmington. (See Machinery Wanted.)

Okla., Drumright.—City voted \$35,000 bonds to extend water-works. Address The Mayor. (Lately noted.)

Tenn., Knoxville.—Radium Water Co., capital \$10,000, incptd. by W. C. Chandler, C. P. Price, J. B. Martin and others.

Tex., Livingston.—City is reported to have voted to construct water-works; cost about \$20,000. Address The Mayor.

Tex., Mineola.—Mineola Ice, Light & Water Co., C. M. Dozier, Secy., is reported to expend \$18,000 to extend water mains.

Tex., San Antonio.—Bexar County Comms. let contract J. W. Moore & Sons at \$9519 to erect buildings for water supply system and San Antonio Machine & Supply Co. at \$5650 to install equipment; contract calls for system with slow sand filters and elevated concrete tank, power-house and laundry, modern mill type; Van H. Howard, County Auditor; Const. Engr., Terrell Bartlett, San Antonio. (Call for bids lately noted.)

Tex., Slaton.—City will vote on \$10,000 bonds for water-works. Address The Mayor.

Va., Petersburg.—City will construct 2 water tanks and towers; J. E. Harvell, Chrmn. Water Committee, receives bids until May 17; R. D. Budd, City Engr. (See Machinery Wanted.)

W. Va., Ravenswood.—City, Ira S. Bartlett, Mayor, will construct water system, requiring about 1600 ft. 8-in. (30 tons), 9000 ft. 6-in. (150 tons) and 7000 ft. 4-in. (71 tons) cast-iron pipe, with specials, hydrants,

valves, etc.; also 2 cypress tanks, 1200 lbs. capacity each; 75 to 80 B. H. P. gas engine, 1 triplex and 2 deep-well pumps; bids until May 14; J. V. Dunbar, Engr. (See Machinery Wanted.)

W. Va., Wheeling.—City votes May 15 on \$640,000 bonds for installation of Smith oil sand filter system; estimates of cost as follows: Installing filter, 20,000,000 gals. capacity, \$430,000; valve chambers and auxiliary pumping station with 4 centrifugal 10,000,000 gals. capacity pumps, \$60,000; concrete reservoir, 5,000,000 gals. capacity, \$90,000; 26-in. pipe line from reservoir to present pumping station, \$70,000; system complete, total, \$620,000; rights of way, \$30,000 additional; Chas. B. Cooke, City Engr. (Lately noted.)

WOODWORKING PLANTS

Ala., Anniston.—Grocery Bins.—Company will organize to manufacture sanitary bins for grocers; John S. Reaves to be Pres.-Mgr.; J. G. Wells, V.-P., Secy. and Treas.; own building; will need machinery, lumber and veneer. (See Machinery Wanted.)

Ala., Anniston.—Buggies.—Hale Buggy Mfg. Co. reorganized with \$50,000 capital stock and J. A. Evans, Pres.; J. W. Gresham, V.-P.; W. H. Weatherly, Secy., and Jas. Keith, Jr., Treas.; will operate plant of former Hale Buggy Co.

Ala., Dadeville.—Boxes.—W. H. Wynn contemplates building box factory.

Ark., Batesville.—Store Fronts, etc.—S. T. Barton of Benton, Ark., will establish plant to manufacture store fronts, store and office fixtures, swings, etc.

Ark., Jacksonport.—Cooperage.—Acme Cooperage Co., capital \$2000, incptd. by N. V. Turner, W. B. Turner, V. L. Turner and others.

Miss., Tylertown.—Vegetable Packages.—Tylertown Box & Mfg. Co. (lately noted organized) has purchased equipment for manufacture of vegetable packages; will occupy 40x100-ft. mill-construction building; J. T. Parker, V.-P.; W. A. Boyd, Secy., Treas. and Mgr.

N. C., Asheville.—Caskets.—National Casket Co. let contract Merchant & Broyles of Asheville to build addition to plant; length 160 ft.; monolithic concrete; cement floors and roof; fireproof; cost \$25,000 to \$30,000; Archt., Wm. J. East.

N. C., High Point.—Furniture.—Samuel B. Coffin, 529 Hamilton St. (lately noted to rebuild burned plant), let contract for erection 60x144-ft. building; ironclad, frame construction; cost about \$5000; material purchased locally; finishing plant; contemplate buying goods in the white and finishing for retail trade; library suits—tables, settees, chairs and rockers.

N. C., Lexington.—Furniture.—Lexington Upholstery Co., D. F. Conrad, Pres., will rebuild plant reported burned; erect 2-story 30x90-ft. building; mill construction; ironclad or brick; construction by company; no machinery needed; manufacture upholstered furniture.

N. C., Scotland Neck.—Furniture.—Scotland Neck Furniture Co., capital \$12,500, incptd. by Ralph A. Phillips, C. A. Jones and Mary Lou Jones.

Tenn., Johnson City.—Vehicle Materials, etc.—Johnson City Lumber & Mfg. Co., T. B. Wallace, Pres., Greenville, S. C., will erect 3 buildings containing 30,000 sq. ft. floor space, boiler-house and office building; large east structure, 400 ft. long; mill construction; install band-saw mill, planing mill, general woodworking plant, including bending plant, and 300 H. P. steam plant; invites estimates on equipment; will manufacture lumber, dimension stock, flitches, bent rims for vehicles and round tables, and wooden parts for looms for textile mills; W. S. Smith, Supt. in charge construction; incorporation with \$25,000 capital, etc., lately noted. (See Machinery Wanted.)

FIRE DAMAGE

Ala., Grand Bay.—C. W. Stillwell's residence near Grand Bay; loss \$7500.

Ala., Mobile.—Dixie Lumber Co.'s mill at Ann and Tennessee Sts.; loss on mill, \$10,000.

Ala., Tuscaloosa.—A. Holczstein's residence; loss \$5000.

Fla., Arcadia.—L. L. Morgan's residence; loss \$4000.

Fla., Bradentown.—S. M. Pearce's packing plant.

Fla., Citra.—J. R. Williams' residence, "The Mansion"; loss \$65,000.

Fla., Freeport.—Beatrice Mill Co.'s plant; estimated loss, \$126,000; owned by R. E. L. McCaskill.

BUILDING NEWS

BUILDINGS PROPOSED

APARTMENT-HOUSES

Fla., Mulat.—S. Otis' lumber yard, drykiln and about 1,500,000 ft. lumber; estimated loss, \$26,000.

Fla., Plant City.—J. S. Whitehurst's residence.

Ga., Camilla.—H. Feinberg's store.

Ga., Carrollton.—Neal Garage.

Ga., Lafayette.—T. J. Edge's sawmill and gin; estimated loss \$3000.

Ga., Lindale.—Buildings at Boozeville of W. G. Dunahoo, loss \$5000; Skelton Furniture Co.'s building, owned by D. W. Garnett, loss \$5000; Paul's Drug Store, loss \$5000.

Ga., Rays Mill.—Rays Mill Hotel, owned by J. N. and J. S. Swindle, loss \$5000; J. M. Parrish & Co.'s store, loss \$16,000; J. H. Swindle's building, loss \$4000.

Ga., Vinings.—Cobb County Chemical Mining Co.'s plant; estimated loss \$25,000.

Ky., Burgin.—Colored Methodist Church (address The Pastor) and 6 dwellings; total loss \$6000.

Ky., Clinton.—D. Johnson's residence and outbuildings.

Ky., Fishersville.—Fishersville Hotel and outbuildings, Geo. Wischart, Propr.; loss \$3000.

Ky., Hazel.—L. S. Dubois, Son & Co.'s store; J. F. White & Son's store, loss \$20,000; Turnbow & Lamb's store, loss \$4000; Meyer Bros.' store, loss \$15,000; W. F. White's warehouse, loss \$3000.

Ky., Hindman.—Hindman Normal School, owned by Geo. Clark, principal; loss \$6000.

Ky., Murray.—Asher Graham's residence; loss \$6000.

Ky., Nicholasville.—Huff & Hendren's morgue; Mrs. F. P. Taylor's residence; loss \$15,000.

La., West Monroe.—Mrs. L. N. Larche's residence; loss \$4000.

Md., Belair.—Reckord Bros.' cannery, stable and warehouse; Jos. M. Street's warehouse; estimated loss, \$15,000.

Md., Chesapeake City.—Murphy's flour and grist mill, owned and operated by Harry Davidson; estimated loss, \$6000.

Miss., Bay St. Louis.—Jas. H. Breath's bakery; estimated loss \$1000.

Miss., Columbia.—C. R. Foxworth's residence; loss \$12,000.

Mo., Portageville.—Segal & Barkovitz's store; W. R. Angel & Son's store; Dr. E. R. Stone's residence; Farmers' Bank building.

Mo., St. Louis.—Hafner Mfg. Co.'s warehouse; loss \$80,000.

Mo., Wellston.—W. H. Percival's residence at 6452 Wellsmar Blvd.; Chas. Crawford's residence at 6456 Wellsmar Blvd.; total loss \$15,000.

N. C., Lexington.—Lexington Upholstery Co.'s plant, estimated loss \$7000; Lexington Motor Co.'s garage, loss \$1000.

N. C., Raleigh.—Eddie Jones' residence and outhouses; loss \$5000.

S. C., Duncan.—Store J. R. Moore. (Lately noted as D. R. Moore.)

S. C., Greer.—Cotton gin, owned by J. B. Mendenhall and operated by Smith-DeShields Gin Co.

Tenn., Cordova.—W. G. Allen's residence; loss \$10,000.

Tenn., McMinnville.—Nashville, Chattanooga & St. Louis Ry.'s bridge; loss \$3000; H. McDonald, Ch. Engr., Nashville.

Tex., Brenham.—J. W. Ripple's store at Greenville; loss \$6000.

Tex., Dallas.—J. R. Anderson's residence at 4717 Garland Ave.; loss \$3000.

Tex., Fort Worth.—Mrs. Josie Ray's residence at 1206 Franklin St.

Tex., Greenville.—Dr. S. G. Duff's residence; loss \$6000.

Tex., Hillsboro.—Will Givens' residence on N. Church St., occupied by Albert Welch; loss \$4500.

Tex., Kaufman.—Kaufman Cotton Oil Co.'s plant; estimated loss \$15,000.

Tex., Mineola.—Geo. W. Fouke Lumber Co.'s sawmill.

Va., Damascus.—C. C. Craft's moving-picture theater; H. A. Ford's broom factory; J. W. Mann's store; C. A. Cole's building; Wiley Sullivan's residence; total loss \$6000.

Va., Fredericksburg.—Asbury Chapel in Spotsylvania county. Address The Pastor.

Va., Suffolk.—W. T. Kilby's residence near Suffolk; loss \$5000.

W. Va., Bethany.—Gymnasium at Bethany College; loss about \$5000.

W. Va., Huntington.—Socialist Printing Co.'s plant; loss about \$4000.

DAMAGED BY STORM

Tex., Waco.—East Waco warehouse of Exporters & Traders' Compress Co.; loss \$3000.

Fla., St. Augustine.—Goold T. Butler will finish Matanzas Apartments on Bay St. according to original plans; will cover brick construction with white stucco, replace wooden railings surrounding veranda with concrete, install solid concrete flooring, etc.

Md., Baltimore.—Lee S. Meyer, 302 Continental Bldg., will erect apartment-house at Lake Drive and Brookfield Ave.; site 87x116 ft.

Md., Baltimore.—David Siegel will erect store and apartment-house. (See Stores.)

Md., Baltimore.—Lewis S. Scott purchased property at Garrison Ave. and Egerton Rd. through Charles Morton, 209 St. Paul St., Baltimore, and is reported to erect apartment-house; 6 stories; 24 apartments; site 60x180 ft.

Md., Baltimore.—Boulevard Apartment-House Co., Knickerbocker Bldg., has plans by Clyde N. Fritz, 1523 Munsey Bldg., Baltimore, for addition to apartment-house at 33d and St. Paul Sts.; 3 stories; 69x32 ft.; brick; tile roof; hot-water heat; electric light; cost about \$30,000; owner will supervise building and let subcontracts; will probably let building contract to J. Henry Smith, 1640 Hanover St., Baltimore.

Mo., Kansas City.—John Connell, 3535 Forest Ave., will erect 6-apartment brick flat at 708 E. 13th St.; 40x50 ft.; cost about \$15,000; E. O. Brostrom, Archt., Kansas City.

Mo., St. Joseph.—Howard Vrooman, 1631 Fred Ave., is reported to erect 3-story and basement apartment-house; cost \$45,000; brick and stone construction.

Mo., St. Louis.—Mentzer Realty Co. is receiving bids to erect apartment hotel. (See Hotels.)

Mo., St. Louis.—John Murphy will erect 2-story tenement-house at 1224-26 McCausland St.; cost \$4000; construction by owner.

Mo., St. Louis.—Wm. Cuba will erect two 2-story tenements at 2710-16 Texas St.; cost \$10,000; construction by owner.

Tenn., Memphis.—Mrs. G. B. Denison is having plans prepared by Mahan & Broadwell, Memphis, for apartment-house at Madison and McNeill Sts.; 175x150 ft.; 12 suites; cost \$40,000.

Tenn., Nashville.—C. K. Colley, 33-40 Life & Casualty Bldg., will erect apartment-house at 2101-9 16th Ave. S.; 225x85 ft.; fireproof; Barrett Specification roof; reinforced concrete floors, oak overlaid; gravity steam heat; gas and electric light; cost \$100,000; plans by owner; work let in detail.

Va., Portsmouth.—J. Davis Reed has plans for store and apartment building. (See Stores.)

W. Va., Charleston.—W. S. Mason plans to construct 3-story apartment-house; cost about \$50,000; A. G. Higginbotham, Archt., Charleston.

W. Va., Parkersburg.—Walker & Hiteshaw will erect building for apartments, etc. (See Stores.)

ASSOCIATION AND FRATERNAL

Ark., Little Rock.—Dr. Morgan Smith will erect building for lodgerooms, etc. (See Stores.)

Miss., Laurel.—Y. M. C. A. is having plans prepared to remodel and enlarge building at Central Ave. and Front St.

Mo., Charleston.—Y. M. C. A. will erect building; 2 stories; cost \$25,000; W. E. Mathews and J. M. Dunham, Asso. Archts., Chemical Bldg., St. Louis, will soon take bids.

Okla., Drumright.—Loyal Order of Moose is erecting building with roof garden; cost \$10,000.

Okla., Cushing.—Cushing Masonic Building Assn. will receive bids till May 8 for erection of Masonic lodge; 2 stories; 45x100 ft.; concrete foundation; brick; white stone trimmings; asbestos roof; yellow-pine interior finish; electric wiring; skylights; plate glass; W. N. Meredith, Archt., Cushing; J. D. Taylor, J. E. Burt, S. P. Alles, Building Comm., all of Cushing.

Okla., Tulsa.—D. J. Kelley is having plans prepared by Geo. Winkler, Palace Bldg., Tulsa, for lodge building; cost \$5000.

Okla., Tulsa.—M. J. Glass is having plans prepared for building, second floor of which

will be occupied by Tulsa Lodge No. 71, A. F. & A. M. (See Stores.)

Va., Richmond.—Liberty Council, Jr. O. U. A. M., is considering sites for proposed building.

W. Va., Morgantown.—Morgantown Union Lodge No. 4, A. F. & A. M., has plans by John H. Harman, Uniontown, Pa., for lodge building; 41x112 ft.; slow-burning construction; slag roof; cost about \$30,000; bids opened May 4; heating, lighting and plumbing separate. (Lately noted.)

W. Va., Parkersburg.—Walker & Hiteshaw will erect building with upper floor probably for lodge hall or offices. (See Stores.)

BANK AND OFFICE

Ark., Monticello.—Stockholders of Monticello Bank & Trust Co. and Citizens' Bank are having plans prepared by Parker & Hitenberry, Port Arthur, Tex., for bank and office building; 2 stories; brick; 42.6x82.1½ ft.; semi-fireproof; Barrett roof; steam heat; cost \$25,000; bids opened in about 2 weeks.

Fla., Bradentown.—J. W. Stevens will erect store and office building. (See Stores.)

La., New Orleans.—City Bank & Trust Co. will not erect building at present. (Lately reported.)

La., New Orleans.—New Orleans Cotton Exchange has plans by De-Buys, Churchill & Labouisse, New Orleans, for cotton exchange building; 13½ stories; lower story marble or polished granite; upper stories stone; 172 ft. 8 in. high; lower and top floors for exchange proper; intervening stories for office suites; cost about \$600,000. (Previously noted.)

Md., Baltimore.—Dr. R. O. Sadler is having plans prepared by Owens & Cisco, 1605 Continental Bldg., Baltimore, to remodel dwelling at 2318 N. Charles St.; offices in basement, apartments above; addition 20x15 ft., 3 stories; brick; tinroof; electric light; cost about \$5000; plans ready about May 7.

Mo., Kansas City.—Southwest Boulevard State Bank, S. Alves, Cashr., 608 Southwest Blvd., is receiving bids through Madorie & Birdsell, 832 Reserve Bank Bldg., Kansas City, for bank building; 1 story; 24x120 ft.

N. C., Wilmington.—Sol Bear estate has plans for store and office building. (See Stores.)

Okla., Oklahoma City.—T. D. Turner & Co. purchased site, 55x140 ft., at Main St. and Oklahoma Ave.; will erect 5-story building; fireproof; reinforced concrete and brick; equipped for offices of company.

Okla., Tulsa.—R. T. Daniel is having plans prepared by J. P. Curtin, Tulsa, for office building at 3d and Boston Sts. (Previously noted.)

Okla., Tulsa.—F. C. Giddings is having plans prepared by Geo. Winkler, Palace Bldg., Tulsa, to erect office building; 2 stories; cost \$25,000. (Noted in Feb. to erect store building.)

Okla., Tulsa.—C. A. and J. D. Mayo are having plans prepared by Geo. Winkler, Palace Bldg., Tulsa, to erect office building; 5 stories; reinforced concrete; 50x140 ft.; cost \$85,000.

Okla., Yale.—B. Sloan will erect bank building; 1 story; 25x80 ft.; brick; cost \$3000; Maurice Jayne, Archt., Oklahoma City.

Tenn., Nashville.—Fourth and First National Banks are considering remodeling Cole Bldg. at Union and Fourth Aves. or erecting new structure on site; Ludlow & Peabody, Archts., 101 Park Ave., New York.

Tex., Dallas.—Federal Reserve Bank of 11th Dist. is having plans prepared by Hubbell & Greene, Dallas, to remodel building at Commerce and Martin Sts.; 5 stories and basement; 25x100 ft.; fireproof; install front; remodel interior; passenger elevator; cost about \$65,000; bids opened about May 18. (Lately noted.)

Tex., Waxahachie.—Mrs. John Skinner, Dallas, is reported to erect building to be occupied by Guaranty State Bank.

Va., Charlottesville.—Charlottesville & Albemarle Ry. Co. will erect building for office, substation and garage. (See Electric Plants.)

W. Va., Parkersburg.—Walker & Hiteshaw will erect building with upper floor probably for offices or lodgerooms. (See Stores.)

CHURCHES

D. C., Washington.—C. L. Harding, Woodward Bldg., is preparing plans for church building; owner's name withheld; 1 and 2 stories; cost \$50,000.

D. C., Washington.—Petworth M. E. Church, Rev. O. J. Randall, Chmn. Building Committee, will erect building on New Hampshire Ave. between Upshur and Varum Aves.; cost about \$20,000.

Ky., Winchester.—First Baptist Church plans to remodel building, install \$3000 pipe organ, etc. Address The Pastor.

Md., Frederick.—Evangelical Reformed Church will expend \$5000 for improvements to Sunday-school. Address The Pastor.

Miss., Meridian.—Central Methodist Church plans to erect residence. Address The Pastor.

N. C., Tryon.—Episcopal church plans to erect addition to building. Address The Rector.

N. C., Asheville.—First Presbyterian Church, Rev. R. F. Campbell, pastor, will enlarge Sunday-school room and install heating plant; cost \$17,500.

S. C., Belton.—First Baptist Church will erect parsonage. Address The Pastor.

Tenn., Cleveland.—Church of Christ will erect building; brick or concrete; auditorium and annex for Sunday-school; cost about \$20,000. Address The Pastor.

Tex., El Paso.—J. W. Bedford has permit to erect brick church in East El Paso addition; cost \$5000.

Va., Franklin.—M. E. Church, J. E. Gilham, Chmn. Building Comm., has plans by Mitchell & Wilcox, Norfolk, for Sunday-school building; 45x65 ft.; ordinary construction; tin roof; warm-air heat; electric light; cost about \$10,000; bids to be taken by building committee; address Chmn. (Lately noted at Norfolk.)

Va., Graham.—Methodist church will erect building in West Graham. Address The Pastor.

Va., Pulaski.—Methodist church is having plans prepared by Frank Stone for building at Jefferson Ave. and 3d St.; brick; cost \$25,000; will soon call for bids.

W. Va., Huntington.—Fifth Avenue Baptist Church has option on site 5th Ave. between 6th and 7th Sts. for proposed \$100,000 building; C. W. Cammack, J. L. Hawkins and L. F. Cavendish, Com.

W. Va., Parkersburg.—St. John's Evangelical Lutheran Church, Rev. H. S. Gilbert, pastor, 932 Avery St., contemplates erecting building; 1 story and basement; cost \$35,000.

W. Va., Weston.—Baptist congregation is erecting building at Central Ave. and 2d St. Address The Pastor.

CITY AND COUNTY

Ala., Huntsville.—Library.—City accepted plans to erect Carnegie library; 2 stories and basement; brick and stone; cost \$12,500. Address The Mayor. (Lately noted.)

Ark., Booneville.—Jail.—Logan County Commrs. will erect jail; cost \$6000 to \$10,000.

Ark., Little Rock.—Offices.—Dr. Morgan Smith will erect building for city offices, etc. (See Stores.)

Ark., Siloam Springs.—City Hall.—City will erect city hall. Address The Mayor.

Fla., Clearwater.—Library.—Town plans to erect Carnegie library; R. T. Daniel, Town Clerk.

Fla., Fort Myers.—Prison.—John W. Owens, City Clerk, receives bids until May 7 to erect city prison; plans and specifications at office of Mr. Owens, Heltman Bldg., over Western Union Telegraph Co.

Fla., St. Petersburg.—Concordium.—City Commrs. rejected petition for bond election on \$150,000 to erect concordium. (Lately noted.)

Ga., Griffin.—Library.—W. A. Murray, Chmn. of Trustees, receives bids until May 7 to erect Hawkes' Children's Free Library; plans and specifications at office of Hentz & Reid, Archts., 932 Candler Bldg., Atlanta, and Mr. Murray, Griffin.

Ky., Lexington.—Jail.—City will erect addition to jail for women; cost about \$4000; Harry Schoonmaker, Jailor.

Ky., Louisville.—Municipal.—Bids received by Board of Public Works until May 5 to erect addition to and alter brick building at 1722 Frankfort Ave.; plans and specifications on application; Roger G. McCrath, Secy.

Ky., Louisville.—Engine-house.—City has plans by W. J. O'Sullivan, Building Dept., City Hall, for fire-engine house at Bardstown Rd. and Maryland Ave.; 36x120 ft.; or-

inary construction; Ludowici tile and tin roof; vitrified brick sidewalk; cost about \$18,000; subcontracts to be let for rubble-stone, concrete, brick, carpentering, roofing, paint, plumbing, electric work; bids opened May 4. (Noted in Apr.). Also will receive bids until May 12 for material and erection of police station-house at 28th and Main Sts.; plans and specifications at office of E. W. Hillerich, Archt., 725 S. 24th St., Louisville.

Mo., Morehouse—City Hall and Jail.—City, H. P. Daugherty, Clerk, will erect city hall and jail; 2 stories; 40x40 ft.; cost \$7500; Lindsay Architectural Co., Archts., Sikeston, Mo.

Mo., St. Louis—Zoo.—City will erect building at Zoo; concrete; 75x100 ft.; cost \$15,000. Address The Mayor.

N. C., Burlington—City Hall and School.—City votes June 8 on \$30,000 bonds to erect city hall and \$40,000 bonds for school building. Address The Mayor. (Lately noted.)

Okl., Tulsa—Market and Sheds.—Bids received until May 3 (extended date) by Board of Commrs. of Charleston Home, C. N. Matthews, Secy., through D. C. Barbot, Archt., 26 Broad St., Charleston, for following work: (1) Alterations and repairs; (2) plumbing and gas fitting; (3) electrical work; (4) roofing; plans and specifications at office of architect as above.

S. C., Charleston—Home.—Separate bids received until May 3 (extended date) by Board of Commrs. of Charleston Home, C. N. Matthews, Secy., through D. C. Barbot, Archt., 26 Broad St., Charleston, for following work: (1) Alterations and repairs; (2) plumbing and gas fitting; (3) electrical work; (4) roofing; plans and specifications at office of architect as above.

Tenn., Union City—City Hall, etc.—City is considering plans by H. P. Taylor, Union City, for combination city hall, fire station and office building to cost \$7000; 32x40 ft.; wood and tile floors; steam heat; electric lighting; cement sidewalks; also reported considering plans by C. H. Sherrill, Paducah, Ky., for similar structure to cost \$10,000. (Lately noted to have let contract to erect city hall.)

Tex., Temple—Fire Department.—City votes June 3 on \$40,000 bonds to erect 2 fire stations, purchase equipment, etc. Address The Mayor.

Tex., Vernon—Library.—City will erect Carnegie library; cost \$12,500. Address The Mayor.

Va., Lynchburg—Farm.—City will soon begin construction of proposed farm building at Rangoon.

COURTHOUSES

S. C., Greenville.—Greenville County Courthouse Commission, David B. Traxler, Chrmn., Greenville, receives June 1 designs from architects for courthouse to be erected; \$60,000 available, exclusive of furniture; H. Oline Jones, Consult. and Supervising Archt., Greenville. (Lately noted.)

DWELLINGS

Ala., Birmingham.—Joe Ward will erect dwelling at 3002 N. 16th Ave.; cost estimated at \$3500.

D. C., Washington.—A. C. Moses, 902 Pennsylvania Ave., acquired tract between 28th and 29th Sts., south of Cathedral; reported to erect dwellings within year and half to cost \$250,000; average cost about \$8000 each.

D. C., Washington.—Dwight J. Partillo, 4208 8th St. N. W., has plans by Vaughn, Haller & West for 5 dwellings at 712-20 Allison St. N. W.; 1 story; frame; cost \$22,000; construction by owner.

D. C., Washington.—Chas. L. Tankersley, 1836 Monroe St. N. W., will erect 7 dwellings in Sauls addition; completion to be effected in fall.

D. C., Washington.—Horace C. Smithy, 1742 Oregon Ave., has plans for 5 dwellings at Emerson and Farragut Sts.; 4 two stories; 1 bungalow type.

D. C., Washington.—Wm. A. Boss, 1320 New York Ave., will erect 6 dwellings at 712-22 15th St.; 2 stories; brick; cost \$14,000.

Fla., Bartow.—Mr. Hill, Contr., will erect residence; 2 stories; frame; cost \$8000 to \$10,000; Mark & Sheftall, Archts., 210 Clark Bldg., Jacksonville, Fla.

Fla., Clearwater.—James T. Taylor, Asheville, N. C., will erect number of bungalows in Pinecrest subdivision.

Fla., Daytona.—Albert H. Jennings and F. A. Witherell, both of Haverhill, Mass., will erect bungalows.

Fla., Jacksonville.—J. S. Halsema will erect 2-story frame dwelling; siding and shingles; 6 rooms; sleeping porches; hardwood floors on lower floor; cost \$3900; W. Mulford Marsh, Archt., 403 Main St., Jacksonville; construction by owner. (Lately noted.)

sonville; construction by owner. (Lately noted.)

Fla., Jacksonville.—Stockton Broome will erect residence in Elizabeth Place, Riverside Ave.; brick veneer; vulcanized shingle roof; hot-air heat; hardwood floors; cost \$12,000; H. J. Klutho, Archt., St. James Bldg., Jacksonville.

Fla., Kissimmee.—J. A. Barclay will erect 9-room bungalow at Beaumont Ave. and Bryan St.

Fla., Miami.—A. R. Smart, Oil City, Pa., will erect bungalow.

Fla., Orlando.—Braxton Beacham has plans by Murry S. King, Orlando, to erect dwelling; Colonial type.

Fla., Tampa.—F. McPherson, State Agt. for National Cash Register Co., will erect residence; colonial style; cost \$3500.

Fla., Webster.—A. A. Wagley, St. Louis, Mo., will erect residence.

Fla., Clearwater.—C. G. Wilder, St. Petersburg, will erect bungalow.

Ga., Atlanta.—J. H. Whisenant will erect 2 dwellings; 1 story; frame; cost \$5000; day labor.

Ga., Atlanta.—Mrs. Eleanor Gunby will erect residence on Habersham Drive; cost \$15,000 to \$18,000.

Ga., Atlanta.—Wesley & Bennett will erect 2-story frame dwelling at 661-3 Ponce de Leon Ave.; cost \$7000; day labor.

Ga., Atlanta.—M. L. Rauschenberg will erect residence; 2 stories; brick; 7 rooms; cost \$5000.

Ga., Atlanta.—T. M. York will erect residence at 152 Atwood Ave.; 1 story; frame; 7 rooms; cost \$3250.

Ga., Gainesville.—Mrs. E. E. Dixon will erect residence on Green St.; English style.

Ga., Savannah.—J. H. McKenna will erect residence on Charlton St. between Whitaker and Barnard Sts.

Ky., Louisville.—Edw. Oesterlitter will erect brick dwelling at 1518 Bardstown Rd.; cost \$5000.

Ky., Louisville.—Elizabeth H. Bromme will erect frame dwelling at 212 Hillcrest St.; cost \$3000.

Ky., Louisville.—Ben Storck will erect brick-veneer residence at 1613 S. 4th St.; cost \$3000.

Ky., Louisville.—H. A. Taylor will erect brick dwelling at 514 W. Ormsby Ave.; cost \$5000.

La., New Orleans.—W. G. Gilbert will erect about 25 dwellings on Peters Ave.

La., New Orleans.—W. J. Bentley will erect residence.

La., New Orleans.—Leonard Kiefer will erect bungalow.

Md., Baltimore.—Park Circle Construction Co., 11 E. Fayette St., has plans by John P. Townsend, 3207 Baker St., Baltimore, for 7 dwellings on Pimlico Blvd. near Woodberry Ave.; 2 stories; 22x34 ft.; brick; slag roof; steam heat; cost \$19,500; construction by owner.

Md., Baltimore.—Acme Building Co., Edmondson Ave. and 18th St., has plans by H. J. Tinley, 4722 Liberty Heights Ave., Baltimore, for 12 dwellings at Parkfront St. and Erdman Ave.; 2 stories; 14x46 ft.; brick; tin roof; hot-air heat; cost \$14,000.

Md., Baltimore.—John Muller, 831 N. Gay St., planned and will erect 14 dwellings at 1900-26 Moog St.; 2 stories; 12x32 ft.; brick; slag roof; cost \$7700; also erect dwelling at 1417 N. Milton Ave.; 2 stories; 14x46 ft.; cost \$1200; same materials.

Md., Baltimore.—Phillip S. Morgan, 12 E. Lexington St., will erect 15 dwellings at Oakhurst Pl. and Laurens St.; 14x48 ft.; brick; hot-air heat; electric light; cost \$25,000; Chas. R. Burdett, Archt., 226 N. Fulton Ave., Baltimore; construction by owner.

Md., Baltimore.—Geo. R. Morris, 45 Gunther Bldg., planned and will erect 2 dwellings on Chatham Rd. between Garrison and Ayrdale Aves.; 2½ stories; 28x28 ft.; frame, shingle exterior; slate roof; steam heat; gas and electric light; cost about \$7000.

Md., Catonsville.—M. Fillmore Carter, Edmondson Ave. and Dennison St., Baltimore, will erect dwellings. (See Land Developments.)

Miss., Greenville.—Judge Percy Bell is having plans prepared by W. H. Parker, Greenville, for dwelling on Washington Ave.; 2 stories and basement; 52x68 ft.; brick; asbestos slate roof; \$600 hot-water heating; indirect electric light; dumb-waiter; cost \$7000; plans ready May 6. Address Archt.

Mo., Kansas City.—Western Cities' Investment Co. is reported to erect residence at

29 E. 53d St. Ter. and to erect residence of C. C. Weaver of Jenkins Music Co.

Mo., Edgewood.—Chas. S. Robb, 17 W. Kirk St., Chevy Chase, Md., will erect dwelling at Glenbrook Rd. and Moorland Ln.; cost about \$15,000; plans by owner.

Mo., Kansas City.—G. G. Scott will erect residence at 241 W. 62d St. Terrace.

Mo., St. Louis.—Sam Koplar will erect 4 one-story dwellings at 4107-09-11-13 Page St.; cost \$8000; construction by owner.

Mo., St. Louis.—Wm. White will erect 2-story dwelling at 5725 DeGiverville St.; cost \$4000.

N. C., Charlotte.—Mrs. Alfred Williams will erect residence on Lane St.

N. C., Greensboro.—Mrs. W. I. Anderson will erect 2-story residence on Mendenhall St.; cost \$5000.

N. C., Greensboro.—M. W. Gant will erect 2-story residence on Wainman St.; cost \$6500.

N. C., Oxford.—Cam H. Easton is erecting \$10,000 residence.

N. C., Oxford.—Dr. J. S. Watkins will erect residence at Main and Front Sts.

N. C., Salisbury.—Frank Rankin will erect 2 bungalows on W. Council St.

N. C., Salisbury.—J. H. Smith will erect residence on Mocksville Ave.

N. C., Salisbury.—J. F. Somers, Yadkin Hotel, is having plans prepared by J. E. Crane, Salisbury, for residence at Inniss and Long Sts.

N. C., Salisbury.—J. F. Somers is having plans prepared by J. E. Crane 500 Grubb Bldg., Salisbury, for dwelling on W. Inniss St.; frame; cost about \$4000. (Lately noted.)

N. C., Winston-Salem.—R. E. Pollin is having plans prepared for residence on Woodland Ave.

N. C., Winston-Salem.—R. S. Ripple has plans by Joel Hill, Winston-Salem, for 2-story residence.

Okl., Oklahoma City.—Nichols & Chandler will erect frame dwelling at 195 E. Park Pl.; cost \$3000.

Okl., Tulsa.—A. E. Lewis has plans by Geo. Winkler, 414 Palace Bldg., Tulsa, for residence; red brick; white stone trimmings; cost \$30,000. (Noted in Apr.)

Okl., Henryetta.—Cay Warden has plans by Paul E. Meeting, Henryetta, for dwelling; 2 stories; 30x38 ft.; shingle roof; gas heat; gas and electric light; cement walk; cost about \$3600. Address owner. (Lately noted to open bids about May 8.)

S. C., Anderson.—Dr. J. L. Smethers will erect residence on E. River St.

S. C., Columbia.—Parker Cotton Mills Co., Greenville, S. C., will erect 16 dwellings for operatives at Olympia and Granby plants.

Tenn., Knoxville.—B. H. Sprinkle, 422 Union Ave., has plans by Albert Bauman, Knoxville, for 7 dwellings on Union Ave.; 8 rooms; brick; gravel roof; hot-water heat; gas and electric light; cement sidewalks; cost \$25,000; construction by owner; lately noted; address owner. (See Machinery Wanted.)

Tenn., Memphis.—J. W. Garrison will erect 4 cottages at 657 Polk Ave., 740, 942 and 944 Keel Ave.; cost \$2800; 3 rooms; frame.

Tenn., Memphis.—R. N. Lloyd is erecting 2-story brick residence at 744 Snowden Circle; cost \$4000; lighting and heating to cost \$500 additional.

Tenn., Memphis.—Hugh H. Higbee is erecting brick veneer residence at 34 S. Rembert St.; cost \$5000; hardwood interior finish; hot-air heat; slate roof.

Tenn., Nashville.—Cleary Gilmore has plans by Harry Frahm, Nashville, for residence on Belmont Blvd.

Tenn., Nashville.—Dr. Herschel Ezell has plans by Harry Frahm, Nashville, for 2-story frame residence on Sweetbrier Ave.

Tenn., Nashville.—Dr. T. A. Wigginton has plans by Hart & Gardner, Nashville, for residence; stucco.

Tenn., Nashville.—E. F. Willis has plans by R. E. Turbeville, Nashville, for residence; 2 stories; brick; composition roof; cost \$5500.

Tenn., Rives.—W. T. Clemons has plans by H. P. Taylor, Union City, Tenn., to erect dwelling; 40x73 ft.; asphalt shingle roof; wood floors; hot-air heat; cement sidewalks; cost \$4000; date of opening bids not set.

Tenn., Winchester.—T. A. Embrey will erect dwelling at Smith and Jefferson Sts.; 40x30 ft.; mill construction; shingle roof; steam heat; electric light; cost \$3000; day labor. (Lately reported burned.)

Tex., Dallas.—J. F. Garvin will erect \$11,000 brick veneer residence.

Tex., El Paso.—E. L. Torres will erect brick bungalows in Highland Park; cost \$3000.

Tex., El Paso.—Mayfield Building & Improvement Co. will erect brick residence in Kern Pl. addition and 2 bungalows in Franklin Heights addition; cost \$18,000.

Tex., Fort Worth.—J. P. McGee will erect residence at Hemphill & Cantey Sts.; cost \$3000.

Tex., Houston.—U. S. and D. Froese will erect 12-room duplex house at Hamilton and Bell Sts.; cost \$4000.

Tex., Houston.—A. Spinner will erect residence on Oxford St.; cost \$3200.

Tex., San Antonio.—W. A. Baily will erect 45 dwellings; cost \$200,000, including site.

Tex., San Antonio.—Gus Glescke will erect 10-room residence on Washington Pl.; cost \$14,000.

Tex., Sulphur Springs.—John Haynesworth is erecting dwelling on Gilmer St.

Tex., Sulphur Springs.—Earl Stirling is erecting residence on E. Jefferson St.

Tex., Temple.—J. H. Davis planned and will erect rooming-house on 1st St.; ordinary construction; gravel roof; gas heat; electric light; cost \$3000.

Tex., Waco.—P. L. Whitenburg will erect 10-room frame residence and store; cost \$3600.

Va., Richmond.—Henry S. Wallerstein will erect 2-story frame and stucco dwelling on 30th St., Woodland Heights; cost \$4000.

Va., Richmond.—Dr. H. S. MacLean will erect residence on Monument Ave.

Va., Richmond.—D. P. Watson will erect 2-story brick dwelling at 1706 Park Ave.; cost \$5800.

Va., Richmond.—John Haw will erect detached 2-story brick dwelling on Stuart Ave.; cost \$5200.

Va., Richmond.—C. B. Snow will erect 2-story brick dwelling on Monument Ave.; cost \$13,000.

Va., Richmond.—Kate B. Lockett will erect detached 2-story frame dwelling on Virginia Ave.; cost \$3000.

Va., Richmond.—W. J. Gilman will erect 4 two-story brick dwellings on Dooley St. and Floyd Ave.; cost \$9500.

Va., Roanoke.—A. E. King will erect 2-story brick-cased dwelling on 13th Ave.; cost \$3300.

Va., Roanoke.—B. M. Phelps will erect 2-story brick-cased dwelling on 16th Ave.; cost \$3300.

Va., Staunton.—Chas. A. Holt will erect dwelling on E. Main St.; cost \$3000 to \$6000; bids opened about July 1.

W. Va., Huntington.—C. A. Alvis will erect 2-story brick residence at 7th St. and 10th Ave.; cost \$3000.

W. Va., Huntington.—Thos. Harvey will expend \$4300 for repairs to dwelling and construction of porch at 1044 Third Ave.

GOVERNMENT AND STATE

Fla., Pensacola.—Postoffice.—Treasury Dept., Washington, D. C., opened bids for betterments in postoffice and courthouse; C. H. Turner Construction Co., Pensacola, is lowest bidder and will receive contract; cost about \$35,000. (Lately noted.)

Ga., Ft. Screven.—Warehouse.—U. S. Quartermaster Dept., First Lieut. T. S. Dusenbury, officer in charge, Ft. Screven, opens bids May 5 to erect militia warehouse; 20x30.3 ft.; fireproof; slate roof.

Md., Riverdale.—Postoffice.—O. Klinger, 1025 18th St. N. W., Washington, D. C., receiving bids to erect postoffice and store building. (See Stores.)

Tenn., Covington.—Postoffice.—Treasury Dept., James A. Wetmore, Acting Supervising Archt., Washington, D. C., is reported to revise plans for postoffice and invite new bids. (Contract previously reported let.)

Tex., Marlin.—Postoffice.—Treasury Dept., Jas. A. Wetmore, Acting Supr. Archt., Washington, D. C., opens bids June 14 to erect postoffice, including mechanical equipment, lighting fixtures and approaches; 260 sq. ft. ground area; basement and mezzanine; brick; stone faced; partly fireproof; plans and specifications to be had at office of Archt. or Custodian of Site, Marlin.

W. Va., Martinsburg.—Postoffice.—Treasury Dept., Jas. A. Wetmore, Acting Supervising Archt., Washington, D. C., will improve postoffice, including installation of elevator, stairway, enlarge and remodel workroom of office; has \$20,000 appropriation.

HOSPITALS, SANITARIUMS, ETC.

D. C. Washington.—District Comms., Daniel E. Garges, Ch. Clerk, are having plans prepared by Leon E. Dessez, 1421 F St. N. W., Washington, for proposed Gallinger Hospital; appropriation not made.

Ga., Milledgeville.—Prison Com. will erect hospital at State Farm.

N. C., Kinston.—Memorial Hospital will erect \$35,000 addition to hospital; 3 stories; Dr. W. T. Parrott is interested.

Okla., Tulsa.—Tulsa Hospital Assn., 752 W. 5th St., has plans by C. L. Reeder, Reeder Annex, Tulsa, for addition to hospital; 3 stories; 30x50 ft.; fireproof; steam heat; electric light; vault lights; elevator; bids opened May 15; address Archt., care Tulsa Hospital Assn.; lately noted. (See Machinery Wanted.)

Tex., San Antonio.—Bexar County Comms. receive bids about May 15 to erect city and county hospital; 4 stories; reinforced concrete and brick; tile partitions; terra-cotta cornice; tile floors; elevators; cost about \$250,000; Alice B. Ayres and Reuter & Harrington, Archts., San Antonio. (Previously noted.)

Va., Newport News.—Dr. Jos. T. Buxton will erect addition to residence; L-shape; accommodations for 35 patients; vacuum-cleaning equipment; cost \$15,000.

HOTELS

Ark., Hot Springs.—Arlington Hotel Co. and New York Hotel Co. are having plans prepared by Mann & Stern, Gazette Bldg., Little Rock, for annex to Arlington Hotel; 6 or 9 stories; 150x150 ft.; fireproof; probably 2 passenger elevators. 1 freight, 2 lifts, 2 dumbwaiters; other details not decided; cost \$350,000 to \$400,000; bids received in about 4 months. (Noted in April.)

Fla., Bushnell.—Nathan Perless Co., Milwaukee, Wis. (Col. E. G. Rahr and associates), will erect hotel and other structures on tract in Sumter county to be developed.

Fla., Leesburg.—J. A. McCormick contemplates erecting addition to Magnolia Hotel; brick; 21 rooms.

Fla., Miami.—W. J. Brown is receiving bids to erect hotel; cost about \$10,000.

Fla., Panama City.—Panama Hotel is reported to erect 16 additional rooms.

Fla., St. Petersburg.—Mrs. Reed will erect addition to Wigwam Hotel.

Mo., Kansas City.—E. Randall McClelland is reported to erect 125-room hotel at Armour Blvd. and Robt. Gillham Rd.

Mo., Kansas City.—Baltimore Avenue Investment Co. will erect hotel at 1114 Baltimore Ave.; 7 stories; 25x142 ft.; 80 rooms; cost \$30,000; J. H. Martling and H. F. Brandenburger, Archts., Kansas City.

Mo., St. Joseph.—Howard Vrooman, 1631 Fred Ave., St. Joseph, is reported receiving bids to erect hotel; 10 or 12 stories and basement; 180x105 ft.; cost \$350,000.

Mo., St. Louis.—Mentzer Realty Co., Chemical Bldg., is receiving bids through W. H. Mills, Archt., 1223 Chemical Bldg., St. Louis, for apartment hotel; 5 stories and basement; 50x100 ft.; brick, concrete and terra-cotta; marble and mosaics; cost \$125,000.

Okla., Tulsa.—A. C. Johnson is having plans prepared by Geo. Winkler, Palace Bldg., Tulsa, to erect hotel and business building; cost \$28,000.

Tex., Dallas.—Guidera & Bell, 1608 Main St., will erect building for hotel and store at Houston and Jackson Sts.; 50x100 ft.; semi-fireproof; tar and gravel roof; steam-heating plant for 60-room hotel; passenger elevator; cost \$45,000; construction begun by owners. (Lately noted.)

Tex., El Paso.—Z. T. White is reported having plans prepared by Trost & Trost, El Paso, for annex to Paso del Norte Hotel for Paso del Norte Hotel Co.; 9 stories; 25x134 ft.; fireproof; cost \$150,000.

W. Va., Beckley.—Beckley Hotel Co. organized with Wm. MacTaggart, Prest.; T. E. Bibb, V. P.; A. Z. Lilly, Secy.; C. L. Beckner, Treas.; will erect \$40,000 hotel.

MISCELLANEOUS

Ala., Selma.—Cafe.—James James, Montgomery, acquired Printas' Cafe and will expend several thousand dollars for improvements, including plate-glass front, marble counters, new lighting system, etc.

Fla., Jacksonville.—Undertaking Establishment.—Marcus Conant will remodel 2-story brick-vener building, erect addition in front 20x40 ft., addition in rear 30x40 ft., and install new front; cost about \$10,000; Mark &

Sheftall, Archts., 210 Clark Bldg., Jacksonville.

Fla., Jacksonville.—Clubhouse.—Florida Yacht Club will erect clubhouse at 2825 St. John's Ave., extending 150 ft. into water; cost about \$50,000; also provide Japanese garden, construct dance floor, etc.

Fla., Orlando.—Civic.—Board of Trade, V. W. Estes, Secy. and Treas., is promoting erection of civic building; 100x117 ft.; ordinary construction; cost \$15,000; will decide on plans within 10 days; tentative plans by Murry S. King, Orlando. (Noted in April.)

Ga., Augusta.—Bathhouse.—W. E. McLendon and John C. May are reported to erect bathhouse with 100 apartments; upper floor for dressing-rooms, etc. (See Miscellaneous Enterprises.)

Md., Edgewood.—Clubhouse.—Edgewood Club Co., W. R. Tuckerman, Prest., 816 Connecticut Ave. N. W., Washington, D. C., has plans by Boal & Brown, 1725 H St. N. W., Washington, for clubhouse and swimming pool; 2 stories; cost \$10,000.

Mo., Kansas City.—Exposition.—Mid-Continent Exposition Club, W. A. Rule, Secy., 4079 Republic Bldg., will erect clubhouse, exposition buildings, construct 2 mi. creosoted wood-block automobile speedway, 1 mi. dirt racetrack, etc.; cost \$1,000,000; Root & Siemens, Archts., 1202 Scarritt Bldg., Kansas City.

Okla., Chickasha.—Clubhouse.—Chickasha Country Club is having plans prepared for clubhouse; frame; 50x30 ft.; veranda; lockers and shower baths in basement.

Okla., Drumright.—Amusement.—Roberts & Achterman are erecting amusement building; brick and stone.

Va., Jamestown.—Clubhouse.—Norfolk Auto Club, Norfolk, has plans by Harvey Abrames, Monticello Arcade, Norfolk, to remodel Old Penn Bldg. for clubhouse; cost \$10,000.

Va., Leesburg.—Stable.—Edw. B. McLean will erect \$60,000 stable on Belmont Farm.

Va., Richmond.—Clubhouse.—Presidents' Club will erect clubhouse; 1 story; cost \$40,000; Chas. L. Bryant, Archt., Lyric Bldg., Richmond.

W. Va., Charleston.—Salvation Army.—Salvation Army will erect hall; 2 stories and basement; 50x140 ft.; cost \$25,000; H. Rus Warne, Archt., 122½ Capitol St., Charleston.

RAILWAY STATIONS, SHEDS, ETC.

Fla., Lake Worth.—Florida East Coast Ry., E. Ben Carter, Supt. Maintenance of Way, St. Augustine, Fla., will rebuild burned depot.

Fla., Orlando.—Atlantic Coast Line Ry., E. B. Pleasants, Chief Engr., Wilmington, N. C., is reported to improve station; will pave approach with brick, construct train shed, extend present station roof to cover second track along front of station, repaint and otherwise improve present buildings and grounds.

Tex., Ennis.—Houston & Texas Central R. R., G. S. Wald, Gen. Mgr., Houston, approved plans for dining station; will remodel and extend building; also erect dining-room at Hempstead.

Tex., Hempstead.—Houston & Texas Central R. R., will erect dining-room. (See Tex., Ennis.)

Va., Richmond.—Virginia Ry. & Power Co. will erect 1-story building at Main and Vine Sts.; cost \$3750.

SCHOOLS

Ala., Huntsville.—City opens bids May 11 to erect school on Clinton St.; 80x155 ft.; slow-burning construction; 4-ply H. W. Johns-Manville roof; low-pressure steam heat; electric light; address W. T. Hutchens, Prest. Board of Education; L. M. Weathers, Co. Archt., Memphis, Tenn. (Noted in April.)

Ala., Pinson.—Jefferson County Board of Education, Birmingham, will erect school at Palmer Station near Pinson to accommodate 65 pupils.

Ala., Warrior.—School Board will erect 2-story 8-room brick school.

Fla., Clearwater.—Special School Tax Dist. No. 2 votes May 8 on \$20,000 bonds to erect school. Dixie M. Hollis, Secy. Board of Public Instruction of Pinellas county. (Lately noted.)

Fla., Nocatee.—See Fla., Sebring.

Fla., Palmetto.—City will vote on bonds to erect school; cost \$30,000, including site and equipment; Chas. Dennett, Mayor.

Fla., Plant City.—Board of Public Instruction of Hillsborough County, Tampa, Fla., receives bids until May 10 to erect 2-story frame school in Cork Academy Dist., about

5 mi. north of Plant City; plans and specifications at office of Wm. Schneider, Chrmn., Plant City.

Fla., Port St. Joe.—City votes May 27 on \$4000 bonds to erect school; C. F. Streeter, Archt., 513 West Bldg., Jacksonville.

Fla., Sebring.—Board of Public Instruction opens bids May 25 to erect school buildings at Sebring, Nocatee and Venus; Sebring and Nocatee schools each 10 rooms and auditorium; ordinary construction; slate roof; probably jacketed stoves; electric lights; cost \$12,500 each; Venus school about 6 rooms and auditorium; ordinary construction; cypress roof; probably jacketed stoves; cost \$4000; Chas. P. Neiderhauser and Wm. L. Redditt, Archts., Arcadia, Fla., for all buildings. Address Jas. O. Bickley, Arcadia. (Noted in April.)

Fla., Tampa.—Hillsboro County School Board is having plans prepared by A. L. Shaw, Tampa, for Ybor City School; Curtis & Adams, Tampa, for Moody Heights School, and F. J. Kennard, Tampa, for Tampa Heights School. (Previously noted.)

Fla., Venus.—See Fla., Sebring.

Ga., Albany.—City is having plans prepared by J. J. Baldwin, Anderson, S. C., for school provided for in \$40,000 bonds lately noted.

Ga., Menlo.—Menlo School Dist. voted \$12,000 bonds to erect school. Address Dist. School Trustees. (Lately noted.)

Ga., McCaysville, P. O. Copperhill, Tenn.—City, J. E. Adams, Mayor, will erect grammar school; brick; steam heat; bids to be received within 30 days; architect not selected; cost \$8000. (Noted in April to sell bonds.)

Ky., Highland Park.—Trustees of Highland Park Graded Common School Dist. No. 46 receive bids until May 11 to erect school in East Highland Park and improvements on Oakdale school; plans and specifications at office of H. P. Hawes, Archt., Room 401 Urban Bldg., Louisville, Ky.

Ky., Lexington.—City selected site on Ashland Ave. as location for school in eastern section of city. Address The Mayor.

Ky., Louisville.—City is having plans prepared by J. Earl Henry for Belknap School; 2 stories and basement; 177x90 ft.; concrete foundation; brick walls; tile and concrete floors; tile partitions; face brick exterior finish; cost \$80,000; S. D. Jones, Business Director of Board of Education, will soon call for bids.

Ky., Paducah.—M. V. Miller, McCracken County School Supt., received bids until May 10 to erect 2 schools; plans and specifications on file.

La., Alexandria.—Poland School Dist. No. 20 votes May 20 on \$16,000 bonds to erect high school; Jonas Rosenthal, Prest. School Board.

La., Glenmora.—Glenmora School Dist. No. 27 votes May 19 on \$25,000 bonds to erect high school; Jonas Rosenthal, Prest. Parish School Board, Alexandria, La.

La., West Monroe.—City is reported receiving bids to erect school. Address The Mayor.

Md., Betterton.—Board of Education has plans by Wallace E. Hance, Archt., 294 W. 24th St., Wilmington, Del., for school; 1½ stories and basement; cost \$9000.

Md., Rock Hall.—Board of Education will erect school; 2 stories and basement; cost \$12,000; Wallace E. Hance, Archt., 294 W. 24th St., Wilmington, Del.

Mo., Hughesville.—Hughesville School Dist. voted \$5000 bonds to erect high school. Address Dist. School Trustees.

Mo., Joplin.—City voted \$10,000 bonds to erect 4-room addition to West Side School. Address The Mayor.

Mo., King City.—Board of Education, E. G. Ross, Secy., is having plans prepared by J. H. Felt & Co., 800 Grand Ave. Temple, Kansas City, for high school; 2 stories and basement; 60x75 ft.; cost \$20,000.

N. C., Burlington.—City votes June 8 on \$40,000 bonds to erect school building. (See City and County.)

Okla., Chilocco.—Dept. of Interior, Office of Indian Affairs, Cato Sells, Commr., Washington, D. C., receives bids until May 20 to erect addition to stone school; plans and specifications at office of Daily Oklahoman, Oklahoma City; United States warehouses at Chicago, St. Louis and Omaha, Neb., and office of Supt. of Schools at Chilocco; further information from Mr. Sells.

Okla., Cushing.—City selected J. O. Parr, Oklahoma City, to prepare plans for 2 school buildings; 2 stories; 8 rooms; cost about \$14,500 each; plans ready by May 6. (Lately noted voting bonds.)

Okla., Glennpool.—Board of Education re-

ceives bids until May 7 to erect addition to school; plans and specifications at office of E. Eudacott, Archt., Tulsa, Okla.

Okla., Sapulpa.—City votes May 18 on \$150,000 bonds for schools. Address The Mayor. (Lately noted.)

S. C., Bolling Springs, R. F. D. from Spartanburg.—Bolling Springs School Dist. is reported to erect \$6000 high school. Address School Trustees.

S. C., Greenwood.—School Dist. No. 15 will erect school; considering 3-room structure to cost \$3000, and 4-room building to cost \$4000. Address Dist. School Trustees.

Tenn., Brownsville.—Haywood County Comms., Jas. Tipton, Chrmn., will issue \$12,500 bonds to erect high school; Mahan & Broadwell, Archts., Memphis, Tenn. (Lately noted.)

Tenn., Clinton.—Albert B. Baumann, Archt., Knoxville, receives bids until May 15 for 6 schools in Anderson county; 58x65 ft.; 1 story and basement; brick foundations; brick veneer wall construction; gravel roof; hot-air heat; electric lights; estimated cost, \$40,000.

Tenn., Greenfield.—Greenfield Training School will rebuild burned structure; 1 story.

Tenn., Manchester.—City will erect school on College St.; metal or composition roof; cost about \$8000; bids opened Apr. 26; M. Wright Kiekerson, Manchester, interested. (Lately noted to issue bonds.)

Tenn., Memphis.—City has plans by Mahan & Broadwell, Memphis, for 2-story-and-basement brick school on Highland Ave.; terra-cotta trimmings; heating and ventilation system; cost \$25,000.

Tenn., Nashville.—Vanderbilt University opened bids to erect building for Medical School; James Alexander Construction Co., Memphis, Tenn., is lowest bidder at \$288,530; 206x253 ft.; fireproof; composition roof; direct-indirect steam heat; conduit system of lighting; one ash lift and one freight elevator; cost \$350,000; Samuel Hannaford & Sons, Archts., Cincinnati. (Lately noted.)

Tex., Arlington.—Arlington Training School will erect building; 40x70 ft.; metal roof; \$1500 heating plant; cost \$12,000; bids from local contractors only.

Tex., Carrollton.—Carrollton Independent School Dist. voted \$12,500 to purchase site and erect building. Address Dist. School Trustees.

Tex., Gainesville.—Board of Control of Girls' State Training School adopted cottage plan for erection of school; 5 concrete cottages, each to accommodate 30 girls. (Previously noted.)

Tex., Gonzales.—City defeated \$5000 bonds to erect high school. (Lately noted.)

Tex., Lawrence.—School Board will erect school building; 2 stories; bids opened May 1; R. L. Shoemaker, Secy.

Tex., Marshall.—College of Marshall, Thurman C. Gardner, Prest., Marvin Turney, Chrmn. Building Comm., will erect administration building; fireproof; \$4000 heating plant; accommodate 720 students; cost \$75,000; Geo. Burnett, Archt., Waco, Tex.; bids being taken; contract to be let soon. Address Prest. or Chrmn. Building Comm. (Lately noted.)

Tex., Sherman.—Jesse F. Holt receives bids until May 6 to erect 2-story brick administration building for Carr-Burdett-Carlton College; 50x90 ft.; composition roof; hand elevator; cost about \$10,000; plans and specifications may be had from Sparger & Peters, Archts., Bonham, Tex. (Lately noted.)

Tex., Somerville.—City, John H. Maurer, Mayor, will sell \$12,000 bonds to erect and equip annex to school; brick.

Tex., Temple.—City has plans by J. H. Davis, Temple, for 2 schools, one on Bentley Hill, other on Freeman Heights; 4 rooms of 24x32 ft.; brick and concrete; gravel roof; cost about \$10,000; bids due May 18. (Noted in March.)

Va., Franklin.—City will erect school; 2 stories; 105x82 ft.; cost \$22,000; Chas. M. Robinson, Inc., Archt., Times-Dispatch Bldg., Richmond.

Va., Lynchburg.—Virginia Episcopal School, Dr. Robt. E. Jett, Rector, 114 N. Madison St., Staunton, Va., will erect school; 3 stories and basement; 107x71 ft.; cost \$60,000; F. H. Brooke, Archt., Telegraph Bldg., Washington, D. C.

Va., Richmond.—City will erect school; 2 stories and basement; cost \$25,000; Chas. M. Robinson, Inc., Archt., Times-Dispatch Bldg., Richmond.

W. Va., Clarksburg.—West Virginia Business College is having plans prepared by Stephen B. Ford, Clarksburg, for school and

gymnasium building on Pike St.; 5 stories; 78½x150 ft.; fireproof; cost about \$150,000; date of opening bids undecided. Address J. B. Catlett, Clarksburg. (Lately noted.)

W. Va., Grafton.—Bids received until May 5 by W. M. Watkins, Secy. Board of Education, to erect high school; cost about \$85,000; Frank L. Packard, Archt., Columbus, Ohio. (Lately noted.)

W. Va., Salem.—Board of Education is reported to call election on bonds to erect high school.

W. Va., St. Marys.—Pleasant county votes May 11 on \$50,000 bonds to erect high school. Address County Comms.

STORES

Ala., Birmingham.—C. Hann, main office, Boston, Mass., is reported to rebuild store building lately damaged.

Ala., Birmingham.—E. L. Smith will erect 2-story building at 5th Ave. and 44th St.; cost \$4945.

Ala., Birmingham.—E. C. Douglass will erect 2-story and basement brick building on Milner Heights; cost \$5900.

Ala., Birmingham.—J. D. Coe will erect 1-story brick building on Avenue E; cost \$5000.

Ala., Birmingham.—Ford Bros. will erect two 1-story frame buildings on Graymont Ave.; cost \$3300.

Ala., Gadsden.—Woodliff & Dunlop Furniture Co. will remodel front of building at 5th and Broad Sts.; 60 ft. front; press brick; gravel roof; cost about \$9000. (Lately noted.)

Ark., Little Rock.—Dr. Morgan Smith, 2222 Louisiana St., will erect building at Beech St. and Prospect Ave., Pulaski Heights, for city offices, Masonic lodge and 6 stores; pressed brick stucco panel walls; red tile roof; 70x128 ft.; Chas. L. Thompson, Archt., 504 Southern Trust Bldg., Little Rock.

D. C., Washington.—M. V. McCarthy will remodel building at 614-6 Pennsylvania Ave. N. W.; cost \$5000.

Fla., Bradentown.—J. W. Steven will erect business building; 2 stories; 85x125 ft.; 5 stores on first floor; upper floor for offices.

Fla., Jacksonville.—H. S. Walker will erect 2-story brick building on Ashley St.; cost \$10,000.

Ga., Lindale.—D. W. Barnett will erect brick building at Booeville to replace structure noted damaged by fire at loss of \$5000.

Ga., Lindale.—W. G. Dunchoo will erect 1-story frame building at Booeville to replace structure noted damaged by fire at loss of \$5000.

Ga., Tallapoosa.—J. P. Gholston, Comer, Ga., is reported to erect 3 business buildings to replace Tallapoosa Hotel, lately noted damaged by fire.

Ky., Paducah.—G. W. Kirkland will erect 2-story brick building at 4th and Lake Sts.; 36x62 ft.

Md., Baltimore.—Samuel Want, 1233 Calvert Bldg., will remodel building at Eutaw and Baltimore Sts.; 74x110 ft.; 5 stories and basement; brick; roofing, heating and lighting details undecided; cost about \$85,000; Wm. O. Sparklin and Geo. S. Childs, Archts., 502 Law Bldg., Baltimore; plans ready May 7; bidders will be: Consolidated Engineering Co., 243 Calvert Bldg.; Fidelity Construction Co., 1709 W. Lexington St.; John Hiltz & Son, 7 Clay St.; Monmonier & Sorrell, 1711 McCulloh St.; Blake & Engle, Law Bldg.; Arthur West, 15 E. Fayette St.; Morrow Bros., Fidelity Bldg.; Singer-Pentz Co., Equitable Bldg.; all of Baltimore. (Noted in Mch. to erect building.)

Md., Baltimore.—David Siegel is having plans prepared by John Freund, 11 E. Lexington St., Baltimore, for store and apartment-house at 1013-15 W. North Ave.; 3 stories and basement; 40x41 ft.; iron-spot brick; some steel work; slag roof; steam heat; gas and electric light; lighting and heating reserved; bids due May 7.

Md., Riverdale.—O. Klinger, 1029 18th St. N. W., Washington, D. C., receiving bids to erect postoffice and store building; 2 stories; 30x40 ft.; cost \$9000; F. H. Brooke, Archt., Telegraph Bldg., Washington, D. C.

Miss., Jackson.—John Livelar, Canton, Miss., has plans by H. N. Austin, Jackson, for store and theater building on Capitol St.; ordinary construction. (Noted in April)

N. C., Wilmington.—Sol Bear estate (J. Irving Bear, Mgr.) has plans by J. F. Leitner and H. G. Dill, Wilmington, for store and office building near Front and Princess Sts.; 3 stories; front of ornamental terra-cotta, with granite finish; 2 stories on lower floor, with mosaic tiled floors, metal ceilings; concrete basement; stores and basement-heated with gas-steam radiators.

N. C., Winston-Salem.—Joel Hill prepared plans for business building on 5th St.; 2 stories; walls to support 3 stories; plate glass, brick and terra-cotta front; Spanish style.

Okla., Drumright.—Aaron Drumright is erecting brick and stone business building.

Okla., Drumright.—J. W. Fulkerson is erecting 2-story brick building to cost \$10,000.

Okla., Drumright.—Markey Falls is erecting 2-story brick and stone business building to cost about \$8000.

Okla., Drumright.—O'dell & Stephenson are erecting business building; brick and stone.

Okla., Tulsa.—J. T. Cooper will erect concrete store building at 1320 Perryman St.

Okla., Tulsa.—L. L. Hutchinson will erect building.

Okla., Tulsa.—A. C. Johnson is having plans prepared for hotel and business building. (See Hotels.)

Okla., Tulsa.—Merritt J. Glass is having plans prepared by McDonald & Eichenfeld, Tulsa, for building at 518-20 S. Main St.; first floor for stores, second floor lodge hall; 50x140 ft.; brick; composition roof; wood floors; \$2000 vacuum steam heat; electric and gas light; cost \$15,000; bids opened about May 15; address owner; noted in Apr. (See Machinery Wanted.)

S. C., Fort Mill.—W. B. Ardrey and W. B. Mencham will erect 2 stores to replace burned structures.

S. C., Greenville.—J. A. and D. H. Bull will enlarge and improve building; 30x120 ft.; erect additional story, construct basement, cut off 20 ft. from back and construct store to face North St.; work exterior over with fresco-cement work, etc.

S. C., Greenville.—Traxler Real Estate Co. will erect 5 stores at Washington and Main Sts.; pressed brick; plate-glass front.

Tenn., Tellico Plains.—V. F. Wall & Co. are erecting building to replace structure lately noted damaged by fire.

Tenn., Tellico Plains.—Newkirk & Williams are reported erecting building to replace structure lately noted damaged by fire.

Tex., Austin.—E. M. Scarbrough will erect building; 100x172 ft.; basement; mill construction; steam heat; electric light; cost \$20,000; sidewalk and vault lights \$1300; Roy L. Thomas, Archt., 502 Scarbrough Bldg., Austin; Edwin C. Kreisel, Asso. Archt.; construction begun.

Tex., Dallas.—Central State Bank & Trust Co. will erect row of stores at Bryan and Peak Sts.

Tex., El Paso.—I. Weiss and Maurice Schwartz are reported to erect business block on El Paso St.; site 25x134 ft.

Tex., El Paso.—Popular Dry Goods Co. is reported to erect 6-story fireproof annex to building.

Tex., Houston.—C. Hildebrandt will erect brick store building; cost \$7000.

Tex., Waco.—P. L. Whitenburg will erect store and residence. (See Dwellings.)

Va., Norfolk.—Burrows estate will erect addition to store at 452 Main St.; cost \$3000.

Va., Portsmouth.—J. Davis Reed has plans by Mitchell & Wilcox, Norfolk, Va., for building at Charlotte St. and Webster's Court; 2 stories; 25½x36 ft.; tapestry brick and terra-cotta; iron balconies; lower floor for 2 stores; upper floor for apartments; cost \$5000.

Va., Richmond.—E. R. and J. R. Williams will repair brick building at 9th and Cary Sts.; cost \$3000.

Va., Roanoke.—Jos. A. Gale will expend \$4000 for additions and repairs to building at Campbell Ave. and 2d St. S. W.; cost \$4000.

W. Va., Circleville.—E. A. Lambert will erect in several months building to replace store lately noted damaged by fire.

W. Va., Keyser.—F. H. Babb, Dr. Walter M. Babb and Geo. W. Bank are reported to erect business building.

W. Va., Parkersburg.—Walker & Hiteshe will erect 3-story brick and stone building on Market St.; lower floor for stores; second floor, apartments; upper floor, offices or lodgerooms; frontage 44 ft.

THEATERS

Md., Baltimore.—Crown Amusement Co., Saml. Trimble, Concord and Pratt Sts., is having plans prepared by Callis & Callis, 2065 Kennedy Ave., Baltimore, for motion-picture theater at 619 N. Central Ave.; 31x100 ft.; semi-fireproof; slag roof; steam heat; electric light; cost about \$10,000.

Miss., Jackson.—John Livelar, Canton, Miss., has plans for theater and store building. (See Stores.)

Miss., Jackson.—John Livelar has plans by Harry Austin, Jackson, for theater on Capitol St.; 2 stories; cost \$40,000. (Lately noted under Stores.)

Mo., St. Joseph.—Orpheum Circuit is reported to have plans by A. Landsburg, San Francisco, Cal., for theater to cost about \$100,000.

Mo., St. Joseph.—Electric Realty & Investment Co. is having plans by Carl Boller, Gayety Bldg., Kansas City, for theater; 2 stories and basement; 76x120 ft.; seating capacity 1700; brick, stone and terra-cotta; composition roof.

N. C., Lumberton.—Pastime Theater Co. will enlarge and remodel theater.

N. C., Wilmington.—Howard & Wells have plans by R. H. Stephens, Wilmington, for theater on Front St., and will soon let contract; 41x125 ft.; height of 3-story structure; ornamental pressed brick and terra-cotta; copper and plate-glass marquee; let contract for mirror screen of heavy plate glass to cost \$1000; total cost about \$25,000. (Lately noted.)

S. C., Greenville.—Greenville Amusement Co. has plans by H. Olin Jones, Greenville, for motion-picture theater on N. Main St.; 42x108 ft.; brick; 5-ply pitch and gravel roof; bowled floor of rift pine, \$800; 2-pipe, vapor-thermal valve heating plant; electric lighting, \$700; mechanical ventilation; cost about \$10,000; bids opened May 3; address Archt. (Lately noted.)

Tex., San Antonio.—Max Oppenheimer is having plans prepared by Alfred Giles, San Antonio, for reinforced concrete theater; seating capacity 1000.

BUILDING CONTRACTS AWARDED

APARTMENT-HOUSES

Ala., Montgomery.—Stuart-Monk Contracting & Realty Co. let contract to Bessemer Fire Brick Co., Birmingham, Ala., for exterior walls; hollow tile construction; 3 stories; construction by owner; Frank Lockwood, Archt., Montgomery. (Noted in Mch.)

Ga., Glenville.—M. Sussman let contract to erect building for apartment-house and store. (See Stores.)

Ky., Lexington.—J. E. Cassidy let contract to erect store and apartment building. (See Stores.)

Mo., St. Louis.—J. H. Thaler let contract to E. Mathieson, St. Louis, to erect 2-story tenement-house at 339-32 Virginia St.; cost \$7000.

Mo., St. Louis.—M. Cooney let contract to Wm. Cuba, St. Louis, to erect 2-story tenement-house at 3114 Sheridan St.; cost \$3000.

Tenn., Memphis.—C. L. Clancey let contract to Clinton Lumber Co., Memphis, to erect apartment-house at 15 W. Carolina Ave.; cost \$4000.

Tenn., Memphis.—C. J. Gay let contract to erect store and apartment building. (See Stores.)

Tenn., Memphis.—J. W. Hull let contract to erect store and apartment-house. (See Stores.)

Tenn., Nashville.—Pendleton Apartment Co. let contract to A. W. Hutchison for brickwork; M. A. Lightman & Co., foundation; East Side Plumbing Co., plumbing (all of Nashville) for Pendleton Apartment; cost \$11,000; Hart & Gardner, Archts., Nashville.

Tex., El Paso.—Mrs. A. Byles let contract to J. C. Huff, El Paso, to erect apartment-house; 2 stories; 8 apartments; brick; steam heat; composition roof; hardwood floors; cost \$12,000; construction begun.

Tex., Galveston.—Galveston Brewing Co. let contract to erect building for apartments, etc. (See Warehouses.)

ASSOCIATION AND FRATERNAL

Mo., Bridgeton.—A. F. and A. M. let contract to Jos. Lawton, Jr., Overland R. R. 28, to erect Masonic Temple; 2 stories; 30x65 ft.; G. L. Wageley, Archt., 5971 Easton Ave., St. Louis.

Okla., Lehigh.—I. O. O. F. let contract at \$11,635.15 to John Dennehy & Son, Durant, Okla., to erect theater and lodge building; E. J. Peters, Archt., Shawnee, Okla.

Tenn., Nashville.—Al Menah Temple, Ancient Arabic Noble of the Mystic Shrine, let contract to Foster-Creighton Co., Nashville, to erect boys' dormitory at Masonic Widows and Orphans' Home; cost about \$10,000. (Lately noted.)

W. Va., Moundsville.—M. A. Sybert, Mgr. of Park Theater on Jefferson Ave., will remodel and enlarge structure for moving-picture theater; seating capacity 800; will install heating and ventilating system, large picture screen to 14x18 ft., etc.

WAREHOUSES

Fla., Clearwater.—E. H. Coachman will erect warehouse at Drew Ave. and Tampa & Gulf Coast R. R.; 1 story; frame; 100x150 ft.; cost about \$5000; let contract for material to Pinellas Lumber Co., Clearwater.

Mo., St. Louis.—Hafner Mfg. Co. will rebuild warehouse noted damaged by fire at loss of \$80,000.

N. C., Whiteville.—Whiteville Commercial Club is reported to erect tobacco warehouse to cost about \$6000; will be leased to Wilson & Tuggles, Danville, Va.

S. C., Charleston.—Charleston Warehouse Corp. Incptd. with \$50,000 capital stock by W. B. Willbur, E. P. Guerdard, Jr., and J. J. Murray.

S. C., Charleston.—Charleston Terminal Co. is considering erecting \$100,000 warehouse; will probably decide definitely within 2 weeks.

Tex., Galveston.—Wesrodt Grain Co., August Wesrodt, Propr., will build 85x120-ft. warehouse in connection with grain elevator; lately noted. (See Miscellaneous Enterprises.)

Tex., Houston.—Patrick Transfer Co. will erect warehouse at Richey and Sterrett Sts.; brick and iron; 100x100 ft.; cost \$5000.

Tex., McKinney.—Texas Cotton Mill Co. will erect warehouse; 50x100 ft.

Tex., Houston.—Y. M. C. A. let contract to Jeffers Bros., Houston, to erect building.

BANK AND OFFICE

Ark., Gillett.—Bank of Gillett let contract to E. T. Boals to erect bank building; 25x30 ft.; fireproof; gravel roof; cost \$3500. (Noted in April.)

Ga., Atlanta.—Payne Fireproofing Co., Birmingham, Ala., contractors for fireproofing for Connally Bldg., Connally Realty Co., owner, let contract to Bessemer Fire Brick Co., Birmingham, for fireproofing material; building 80x102 ft.; fireproof; tile and slag roof; total cost, \$300,000; Wells Bros., Riggs Bldg., Washington, general contractors; W. L. Stoddard, Archt., 9 E. 40th St., New York. (Noted in Mch.)

Ky., Louisville.—Southern Methodist Board of Church Extension let contract to Frey Planing Mill Co., Louisville, to erect building at 1115 S. 4th St.; main building 41x60 ft.; chapel in basement 28x40 ft.; fireproof; steel and concrete; 2 stories and basement; Ionic design; faced with Bedford or Bowling Green stone; air-pressure heating system; electric elevators; marble and tile trimmings; cork floors; cost \$75,000; Britton B. Davis, Archt., 1909 Inter-Southern Bldg., Louisville. (Lately noted.)

Miss., Vicksburg.—Robt. Ernst let contract to Curphy & Mundy, Vicksburg, to construct plate-glass front and steel ceiling in building at Washington and Crawford Sts. for Citizens' National Bank.

Mo., St. Joseph.—H. D. Brach, care C. F. Rock Plumbing & Heating Co., let contract to John Kadua, 2822 Mitchell Ave., St. Joseph, for addition to bank; 2 stories; 25x90 ft.; cost \$5000.

W. Va., Parkersburg.—Wood County Bank let contract to H. H. Vought & Co., 340 Madison Ave., New York, to erect bank building; granite and stone; terra-cotta trimmings; cost about \$60,000; Dennison & Hiron, Archts., 475 Fifth Ave., New York. (Lately noted.)

CHURCHES

Ga., Columbus.—City Com. on Cemeteries, Thos. S. Roberts, Chrmn., let contract to Cooper Lumber Co., Columbus, to erect chapel in Riverdale Cemetery, and to Walker Electric Co., Columbus, for plumbing; brick; stone trimmings; 70x32 ft.; metal or tile roof; arcade in center; cost about \$3500; Chas. F. Hickman, architect, Columbus; plans and specifications at office of W. C. Campbell, Supt. of Public Works; separate bids for plumbing. (Lately noted.)

Ky., Campbellsburg.—Baptist church will erect building; 10 Sunday-school rooms, Sunday-school and church auditoriums and basement; furnace heat; electric lights;

cost \$15,000; H. G. Mitchell, Contr., Scottsburg, Ind.

Ky., Louisville.—Deer Park Baptist Church let contract to W. H. Miller, Louisville, to erect building at Bardstown Rd. and Maryland Ave.; red brick; stone columns and trimmings; seating capacity 610; cost \$30,000; Brinton B. Davis, Archt., Louisville.

Ky., Waterford.—Waterford Christian Church let contract to Clarke & Utterbach, Louisville, Ky., to erect building; furnace heat.

Okla., Cushing.—First Baptist Church, Rev. W. T. Scott, pastor, let contract to Lucas & Van Meter, Oklahoma City, Okla., to erect building; 3 stories, 56x83 ft.; brick; stone trimmings; white enamel face brick; concrete foundation; composition asphalt roof; building committee will buy art glass. (Lately noted.)

S. C., Greenville.—Hampton Ave. M. E. Church let contract to John C. Gresham to erect parsonage; 2 stories, 8 rooms; ordinary construction; slate roof; cost \$3,000; Joe T. Lawrence, Archt., Greenville. (Lately noted.)

Tex., Bonham.—First Methodist Church let contract to Peters & Ingalls to erect addition to building; cost about \$4,000.

Tex., Dallas.—Rosemont Christian Church let contract to Patrick, Wigginton & Turner, Dallas, to erect building; 1 story; frame; cost \$2,500. (Noted in January.)

Va., Norfolk.—M. A. Williams, Norfolk, has contract at \$3100 for plumbing in Epworth M. E. Church addition, for which J. Johnson, Law Bldg., Norfolk, has general contract at \$19,655; 70x70 ft.; ordinary construction; tin roof; steam heat; electric lights; Mitchell & Wilcox, Archts., Norfolk. (Lately noted.)

Va., Staunton.—Olivet Presbyterian Church let contract to C. W. Lambert, Staunton, to erect building; cement-block walls; auditorium 40x30 ft.; Sunday-school 24½x24 ft.; cost \$5,000.

CITY AND COUNTY

Ga., Rome.—Municipal.—J. F. Dupree, Rome, general contractor for municipal building, let contract to Bessemer Fire Brick Co., Birmingham, Ala., for floors and partitions; hollow tile; building 140x80 ft., with wing 70x107 ft.; 2 stories and basement; cost \$62,338; A. Ten Eyck Brown, Archt., Atlanta, Ga. (Lately noted.)

Okla., Frederick.—Library.—Trustees let contract at \$3200 to A. H. Krause to erect Carnegie library; complete with lighting and heating plants; will cost about \$10,000.

Va., Richmond.—Home.—Administrative Board let contract at \$2750 to Chas. F. Dugliss, Richmond, to erect 2 pavilions at City Home for colored tubercular patients.

COURTHOUSES

Fla., Clearwater.—J. S. Miller, Gen. Contr. for courthouse, let contract to Bessemer Fire Brick Co., Birmingham, Ala., for fireproofing material; Willis R. Riggers, Archt., Tampa, Fla. (Noted in December.)

Miss., Walthall.—Little-Clecker Construction Co., Anniston, Ala., general contractor to erect courthouse for Webster county, let contract to Bessemer Fire Brick Co., Birmingham, Ala., for hollow tile partitions; building 60x101 ft.; fireproof; cost \$35,000; C. C. Hartwell & Co., New Orleans, Archts. (Noted in September.)

DWELLINGS

Ala., Birmingham.—Birmingham Realty Co. let contract to Holmes Bros., Birmingham, to erect dwelling at 33d St. and 14th Ave.; 2 stories; brick veneer; cost about \$4,000. (Lately noted.)

Ala., Birmingham.—C. L. Smith let contract to L. L. Brown, Birmingham, to erect dwelling at 5th Ave. and 4th St.; frame; cost \$4945. (Lately noted.)

Ala., Birmingham.—F. M. Lynch let contract to C. M. Heller, Birmingham, to erect dwelling on Cliff Rd., Mountain Ter.; 2 stories; brick veneer; cost \$5,000.

Ala., Birmingham.—W. F. Franklin let contract to L. D. Turner to erect dwelling at 35th St. and 15th Ave.; brick veneer; cost about \$6,500.

Ark., Newport.—Mrs. T. B. Stallings let contract to W. H. Snetser, Newport, to erect 6-room cottage; cost \$3,000.

D. C., Washington.—B. Cohen let contract to M. Gumenich, 1228 9th St. N. W., Washington, to erect 2 dwellings at 751 and 757 Morton St. N. W.; 2 stories; brick; cost \$4,000; B. F. Meyers, Archt., Bond Bldg., Washington.

D. C., Washington.—E. H. Gottwals let

contract to D. B. Gottwals, 3123 Warder St. N. W., Washington, to erect seven dwellings at 512-24 Park Rd.; 2 stories; brick; cost \$19,000; Jas. Powell, Archt., 628 6th St. N. E., Washington.

D. C., Washington.—H. T. Holden let contract to R. P. Whitty, 412 Union Trust Bldg., Washington, to erect 4 dwellings at 3111 16th St. N. W.; cost \$16,000.

D. C., Washington.—J. H. Boran let contract to J. B. Gibbs, 1623 L St. N. W., Washington, to erect dwelling at 800 Alabama Ave. S. E.; 2 stories; brick; cost \$34,238; Wm. J. Palmer, Archt., 527 9th St. N. W., Washington.

Fla., Miami.—Robt. Henkel, Detroit, Mich., let contract to Wolf & Uewing, Miami, to erect residence; 60x90 ft.; concrete; asbestos roof; tile work; oak floors; cost \$15,000; Geo. L. Pfeiffer, Archt., Lemon City, Fla. (Lately noted.)

Fla., Miami.—John W. Claussen let contract to C. L. Craig, Miami, to erect dwelling on Bayonne Pl.; 32x35 ft.; reinforced concrete; tile roof; cost \$5,750; H. H. Mundy, Archt., Miami. (Noted in April.)

Fla., Orlando.—T. H. Thompson let contract to erect \$5,000 residence on S. Main St.; 7 rooms and 2 baths; hot-air heat.

Fla., St. Augustine.—T. J. Fletcher and G. A. New let contract to James & Crary, St. Augustine, to erect 2 bungalows on Chautauqua Beach.

Ga., Atlanta.—Mrs. E. M. Archer let contract to I. B. Eason & Son, Atlanta, to erect 2-story frame dwelling at 36 Candler St.; cost \$2,500.

Ga., Augusta.—E. A. Frank let contract to A. J. Little, Augusta, to erect residence on Johns Rd.; cost \$5,000.

Ga., Augusta.—C. B. Holly, Augusta, general contractor for 2 dwellings on Pickens Ave. for Edgar P. Sawyer, let contract to Bessemer Fire Brick Co., Birmingham, Ala., for exterior walls; hollow tile; cost of buildings, \$42,000. (Lately noted.)

Ga., Columbus.—F. Theo. Petri let contract to Cooper Lumber Co., Columbus, to erect residence; 2 stories; brick veneer; concrete basement; furnace heat; asbestos slate roof; hardwood and terrazzo floors; cost about \$10,000; C. P. Hickman, Archt., Exchange Bldg., Columbus.

Ga., Tifton.—Dr. J. L. Brooke let contract to C. V. Arnold, Tifton, to erect residence at Central Ave. and 10th St.; cost \$5,000 to \$6,000.

Ga., Tifton.—B. Y. Wallace let contract to erect residence; cost \$6,000 to \$7,000. (Lately noted.)

Ga., Tifton.—T. W. Tift let contract to S. N. Adams, Tifton, to erect residence; cost \$3,000 to \$3,500. (Lately noted.)

Ga., Tifton.—T. E. Stubbs let contract to erect residence; cost \$6,000 to \$7,000.

Md., Baltimore.—Rufus Woods, 717 Title Bldg., let contract to A. W. Fuss to erect 4 dwellings on 23d St. near Guilford Ave.; 2 stories; 14x55 ft.; brick; slag roof; steam heat; cost \$6,730; John R. Forsythe, Archt., 232 St. Paul St., Baltimore.

Mo., St. Louis.—Geo. H. Knopper let contract to F. Schroeder, St. Louis, to erect 2-story dwelling at 523 Dover Pl.; cost \$4,900.

N. C., Hickory.—Geo. W. Hall let contract to H. E. Whitner to erect dwelling; Q. E. Herman, Archt., Hickory. (Lately noted.)

N. C., Hickory.—J. J. Willard let contract to Geo. W. Ready, Hickory, N. C., to erect dwelling in Kenworth; brick-veneer; slate roof; hardwood floors; Louis Ashby, Archt., Charlotte, N. C. (Lately noted.)

Okla., Henryetta.—Walter Nilsson let contract to Mat Stewart to erect dwelling; 1 story; 30x47 ft.; bungalow type; shingle roof; gas heat; gas and electric light; cost \$3,000; Paul E. Meeting, Archt., Henryetta. (Lately noted.)

Okla., Hobart.—R. E. Benton has plans by and let contract to Nix & Creasy, Hobart, to erect dwelling; 32x44 ft.; ordinary construction; shingle roof; cost \$4,000; furnace \$225; Geo. Pauley, heating and plumbing contractor, Hobart. (Lately noted.)

S. C., Greenwood.—Dr. E. J. Smith let contract to Maudlin & Chapman, Greenwood, to erect residence.

Tenn., Memphis.—Mike Picocco let contract to A. B. Lanning, Memphis, to erect residence; 2 stories; stone veneer; cost \$3,000.

Tenn., Memphis.—Frank C. Minton let contract to J. H. Moselage, Memphis, to erect residence; Italian style; cost \$18,000; Mahan & Broadwell, Archts., Memphis.

Tex., Abilene.—Mrs. J. W. Jennings, Mer-

Abilene, to erect 2 cottages at 6th and Orange Sts.; cost \$4,700.

Tex., Athens.—Tom P. Faulk let contract to erect 2-story brick veneer residence on Tyler St.; cost about \$6,000.

Tex., El Paso.—Macon Realty Co. let contract to J. C. Huff, El Paso, to erect one 4-room and one 5-room dwelling; pressed brick; shingle roof; hardwood floors; total cost \$4,500; construction begun.

Tex., El Paso.—F. W. Connor let contract to J. C. Huff, El Paso, to erect dwelling; 5 rooms and basement; hot air heat; shingle roof; hardwood floors; cost \$3,500; construction begun.

Tex., El Paso.—Mrs. A. Goodman let contract to J. C. Huff, El Paso, to erect dwelling; 9 rooms; 2 stories; hot-water heat; tile roof; hardwood floors; cost \$10,000; construction begun.

Tex., McKinney.—A. G. Wilson let contract to J. M. Jones, McKinney, to erect dwelling; 6 rooms; hollow tile construction; tile roof; hot-air heat; electric light; cost \$8,000; H. B. Thomson, Archt., 116 Wilson Bldg., Dallas. (Lately noted.)

Tex., San Antonio.—O. O. Luter has plans by and let contract to W. A. McArdle, San Antonio, to erect 2 dwellings at 607 9 E. Locust St.; one 8 rooms, other 7 rooms; frame; screened porches; concrete walks; cost \$7,500. (Noted in April.)

Va., Pulaski.—A. B. Hall let contract to erect dwelling to F. Foy Hall, Pulaski; 40x50 ft.; ordinary construction; slate roof; hardwood and pine floors; hot-water heat; electric light; cost \$4,500. (Noted in March.)

W. Va., Bluefield.—Richard I. Devlin let contract to Larkin Williams, Bluefield, to erect dwelling on Jefferson St.; 26x44 ft.; shingle roof; \$300 hot-water heating plant; electric-light fixtures; cost \$3,500; Alex. B. Mahood and owner, Archts., Bluefield. (Lately noted.)

W. Va., Bluefield.—L. J. Holand let contract to Larkin Williams, Bluefield, to erect dwelling on Jefferson St.; frame; hot-water heat; electric work about \$150; cost \$8,000; Alex. B. Mahood, Archt., Bluefield.

W. Va., Huntington.—Harrison & Dean let contract to J. J. West, 417½ 9th St., Huntington, to erect 6 dwellings at 2846-56 3d Ave.; 2½ stories; brick; ordinary construction; slate roof; cost \$3,500 each; all material purchased. (Lately noted.)

W. Va., Ronces Point.—Henry Schmullbach let contract to Wheeling Planing Mill Co., Wheeling, W. Va., to erect lodge house for tenants, dairy barn, etc., on farm.

W. Va., Wheeling.—Fred Burnsner let contract to J. W. Beltz & Sons Co., Wheeling, to erect 8-room residence.

GOVERNMENT AND STATE

Ky., Louisville.—Postoffice.—Treasury Department, Washington, D. C., let contract at \$4554 to Alfred Struck Co., Louisville, to construct lookout gallery in distributing department of postoffice. (Lately noted.)

Miss., Canton.—Postoffice.—Algernon Blair, Genl. Contr. to erect postoffice, let contract to Bessemer Fire-Brick Co., Birmingham, Ala., for fireproofing material; building 3600 sq. ft. ground area; 2 stories and basement; cost \$40,650. (Noted in January.)

HOSPITALS, SANITARIUMS, ETC.

Ark., Hot Springs.—Constructing Quartermaster let contract at \$19,180 to Kelly & Baeh, 600 Osage St., Leavenworth, Kans., to construct hospital corps barracks, diet kitchen and storehouse; at \$722 to M. B. Sanders, Little Rock, Ark., for plumbing and heating and at \$781 to G. T. Schinleyet, Hot Springs, for electrical work. (Lately noted.)

Md., Hagerstown.—Mr. Middlekauff, Hagerstown, has contract to erect addition to Nurses' Home at hospital, according to plans by A. J. Klinkhart, Hagerstown; also to erect third story; will provide 7 additional bedrooms, making capacity 22 people; laundry and new heating system will be installed.

Okla., Guthrie.—Dr. J. W. Duke, State Supt. of Health, let contract to erect building at sanitarium for treatment of mental diseases.

S. C., Spartanburg.—Treasury Dept. let contract to L. A. Justice, Spartanburg, to improve Government pellagra hospital; plans call for reconstruction of main hospital building; install lavatories, bath; repaint, etc.

Va., Madison.—State Epileptic Colony, A. S. Priddy, Supt. let contract to W. K. Barger to erect dormitory and infirmary on farm; 60x75 ft.; ordinary construction; slate roof; \$1,500 steam-heating plant; electric light from present plant; cost \$15,000;

Wm. R. Burnham & Co., Archts., Scott Bldg., Lynchburg, Va. (Lately noted at Lynchburg.)

HOTELS

Tex., Laredo.—Chas. E. Soltan has plans by and let contract to M. Little, Laredo, to erect addition to Bander Hotel; 3 stories; fireproof; asbestos and tin roof; electric light; cost \$39,000. (Lately noted.)

MISCELLANEOUS

Ala., Mobile.—Home.—John T. Cochran, Chmn. of Bldg. Com. of Church Home for Orphans, Montgomery, let contract to Realty Construction Co., Birmingham, to erect administration building and 2 cottages; hollow tile and stucco; tile roofs; electric wiring and plumbing; private heating plant; accommodations for 100 children and officials in charge; plans to erect additional cottage and chapel later; John A. Wetzel, Archt., Mobile. (Lately noted.)

Ga., Atlanta.—Skating Rink.—J. W. Alexander let contract to G. W. Foote, Atlanta, to erect 1-story brick skating rink at 87-89 S. Pryor St.; 105x165 ft.; cost \$11,500. (Lately noted.)

Ga., Atlanta.—Skating Rink and Dance Hall.—J. W. Alexander has plans by and let contract to G. W. Foote, Inman Bldg., Atlanta, to erect skating rink and dance hall at 82-90 S. Pryor St.; 105x165 ft.; brick; Barrett Specification tar and gravel roof; maple floor; electric light; cost \$11,500. (Lately noted.)

Mo., Kansas City.—Pavilion.—Lincoln Electric Park, E. L. Ridge, Secy., 2802 Olive St., let contract to G. H. Seldhoff Contracting Co., 301 Finance Bldg., Kansas City, to erect pavilion; 1 story; 103x435 ft.; frame and stucco; cost \$25,000; Smith, Ray & Lovitt, Archts., 602 Finance Bldg., Kansas City.

Mo., St. Joseph.—Clubhouse.—St. Joseph Turnverein let contract to Peter Caltoux, 8, 7th St., St. Joseph, to remodel clubhouse; 1 story; 60x129 ft.; cost \$10,000; R. Meier, Archt., Lincoln Bldg., St. Joseph.

W. Va., Huntington.—Festival.—Robt. Armstrong and Robt. Holley let contract to Geo. Watts, Huntington, to erect Fall Festival Building; reported cost \$30,000. (Lately noted.)

SCHOOLS

Ga., Lyons.—Board of Education let contract at \$4,006.30 to John T. Ragan, Lyons, to erect school auditorium; 1 story; brick.

Ga., Savannah.—Board of Education let contract to A. A. Artley, Savannah, to erect school building at Anderson St. and Waters Ave.; 96x166.5 ft.; ordinary construction; slate roof; wood floors; heating in general contract; cost about \$50,000; J. deBruyn Kops, Archt., Savannah. (Noted in Apr.)

Md., Kennedyville.—Board of Education let contract to Wm. Workman & Bros., Milton, Del., to erect school; 2 stories; 4 rooms; 33x60 ft.; cost \$6,000; Wallace E. Hance, Archt., 204 W. 21th St., Wilmington, Del. (Previously noted.)

Mo., Bigelow.—Board of Education let contract to Geo. W. Wright, St. Joseph, Mo., to erect 2-story-and-basement school; 62x81 ft.; cost \$13,000; W. F. Schrage, Archt., 43 E. 32d St., Kansas City, Mo. (Lately noted.)

N. C., Winston-Salem.—Slater Normal School let contract to Smith & Hauser, 824 Atkins St. W., Winston-Salem, to erect dormitory; 4 stories; 42x83 ft.; brick; fireproof; cost \$11,000; W. C. Northup, Archt., Winston-Salem; address Contractor. (Lately noted.)

S. C., Cedar Springs.—Trustees of South Carolina School for Deaf and Blind let contract to L. A. Justice, Spartanburg, S. C., to complete interior of primary building, and to W. B. Gulmarin, Columbia, S. C., for steam heat; structure is 55x188 ft.; 3 stories; ordinary construction, slate roof; yellow pine floors; cost \$45,000; heat \$3,000; lighting \$1,000; W. A. Edwards, Archt., 633

Tenn., Camden.—City let contract at \$14,804 to Sladen & McNabb, Waverly, Tenn., to erect high school, including heating, wiring and plumbing; plans by L. M. Weathers, Memphis, call for structure 57½x77 ft.; 2 stories; ordinary brick construction; composition roof; steam heat; electric lights. (Lately noted.)

Tenn., Camden.—City let contract to Sladen & McNabb, Waverly, Tenn., to erect high school; 57x77 ft.; ordinary construction; composition roof; low-pressure steam heat; electric light; cost \$14,000; L. M. Weathers Co., Archt., Memphis, Tenn. (Noted in Apr.)

Tenn., Memphis.—Bessemer Fire Brick Co., Birmingham, Ala., has contract for hollow tile partitions, and Browne & Borum, Mem-

phis, for plumbing and electric wiring, for Prescott school; main structure reinforced concrete; 124x193 ft.; 2 stories and basement; cost \$63,897; D. D. Thomas & Son, general contractors, Memphis; Jones & Furlinger, Architects, Memphis. (Lately noted.)

Tex., Cleburne.—School Board let contract at \$96,672 to H. D. McCoy, Cleburne, to erect 3 semi-fireproof ward schools, and at \$20,775 to H. W. Greenway, Fort Worth, for heating, plumbing and wiring; 16 classrooms each; fireproof corridors and stairs; gravel roof. (Lately noted.)

Tex., Fairview.—School Board let contract to L. E. Adkins to erect school; 77x60 ft.; brick; tar and gravel roof; cost \$10,000; C. H. Leinbach, Archt., 1105 Southwestern Life Bldg., Dallas. (Lately noted.)

Tex., Fort Worth.—Grand Lodge of Texas, A. F. & A. M., let contract to A. W. Flynt, 834 Monroe St., Fort Worth, to erect school at Masonic Orphans' Home; 150x142 ft.; reinforced fireproof; gravel roof; steam heat from present plant; electric light from present plant; cost \$55,000 without equipment; Hubbell & Greene, Architects, Dallas; heating contract to Kinnison Bros., Dallas; plumbing to McDonald-Blevins Co., Ft. Worth. (Lately noted.)

Tex., McGregor.—School Board let contract to A. O. Harvey, Fort Worth, Tex., to erect school; 3 stories; 75x55 ft.; ordinary construction; galvanized-iron roof; electric light; heaters; cost \$16,000; M. L. Waller & Co., Architects, 413 Dan Waggoner Bldg., Fort Worth. Address Contr. (Noted in Apr.)

Tex., Richland.—District No. 36 let contract to Murphy & Croft to erect school; 75x60 ft.; brick; tar and gravel roof; electric wiring; cost \$8,000; C. H. Leinbach, Archt., 1105 Southwestern Bldg., Dallas.

Tex., Santa Anna.—District No. 1 let contract to Sterling Price, Santa Anna, to erect school; 58x43 ft.; ordinary construction; shingle roof; Smith heaters; cost \$5,000; J. P. Caldwell, Archt., Santa Anna. (Lately noted.)

Va., Ashland.—School Board let contract to E. C. Woodward, 2111 W. Main St., Richmond, to erect school; 2 stories and basement; 60x60 and 45x80 ft.; cost \$29,000; Chas. M. Robinson, Inc., Archt., Times-Dispatch Bldg., Richmond, Va.

Va., Fort Defiance.—Augusta Military Academy let contract at \$52,000 to P. J. White, Richmond, Va., to erect barracks; concrete and tiling; fireproof throughout; T. J. Collins & Son, Architects, Staunton, Va. (Lately noted.)

W. Va., Huntington.—Hydraulic Pressed Brick Co., St. Louis, Mo., and Washington, D. C., has contract for face brick to be used in construction of high school, for which Henry Persun, Huntington, has general contract at \$246,000. (Detailed in February.)

W. Va., Huntington.—Board of Education opened bids for plumbing Johnston school; Wm. D. Banks Co., Huntington, is lowest bidder at \$1689; let contract to Columbus Heating & Ventilating Co., Columbus, O., for heating and ventilating; Huntington Building & Construction Co., general contractor, Huntington; plans by Verus T. Rutter, Huntington, call for structure 72x72 ft.; 8 rooms; ordinary construction; fireproof corridors and stairs; composition roof; cost about \$25,000. (Lately noted.)

STORES

Ala., Bessemer.—Dr. J. C. Curry will erect double 1-story brick-front building on 19th St.; contract let.

Ala., Bessemer.—Dr. J. C. Curry let contract to Central Lumber Co., Bessemer, to erect 4 one-story brick buildings at 5th Ave. and 9th St.; each 20x50 ft.

Ala., Headland.—C. E. and Karl D. Simmons, R. D. No. 3, Headland, have not contract to erect building, as recently reported.

Ala., Mobile.—Dr. Frank A. Ortmann let contract to Hancock, Harbin & Hancock, Mobile, to erect 1-story brick store at Davis Ave. and Marmott St.; cost about \$5,000; Hutchisson & Denham, Architects, Mobile.

Ga., Glanville.—M. Sussman let contract to I. F. Leggett, Ridgewood, Ga., to erect building for store and apartment house; 28x75 ft.; mill construction; tin roof; electric light; cement sidewalk; cost \$4500; W. A. Chaffee, Archt., Savannah. (Noted in February.)

Ky., Lexington.—J. E. Cassidy let contract to Combs Lumber Co., Lexington, to erect 3-story brick and stone building at Woodland Ave. and Maxwell St.; lower floor for stores; upper floor for apartments; cost \$10,000.

Md., Baltimore.—Bowen & King let contract to Burns & Russell, 1105-4 American Bldg., Baltimore, to remodel and erect addition, 52x

ft., 2 stories, to store at 405 N. Charles St.; marble front; floor level raised, wood and mosaic floors; new fixtures for retail optical business; cost \$10,500; Theodore Wells Plesch, 1219 American Bldg., Baltimore, Archt. (Lately noted.)

Mo., St. Louis.—R. H. Kobusch let contract to N. Schwegler, St. Louis, to erect 1-story store building at 4008-12 Florissant St.; cost \$3,000.

S. C., Fort Mill.—W. B. Meacham let contract to A. A. Bradford, Fort Mill, to erect store on Main St.; 2 stories; brick; metal roof; cost \$3,000.

S. C., Fort Mill.—J. W. Ardrey let contract to A. A. Bradford, Fort Mill, to erect store on Main St.; 2 stories; brick; metal roof; cost \$3,000.

Tenn., Memphis.—C. J. Gay let contract to D. L. Crouch, Memphis, to erect store and apartment building at Beale Ave. and Turley St.; cost \$4500.

Tenn., Memphis.—J. W. Hull let contract to W. H. Burnell, Memphis, to erect store and apartment-house at Eastmoreland Ave. and S. Bellevue Blvd.; 2 stories; brick veneer; tile roof; cost \$30,000; S. J. Weigel, Archt., Memphis.

Tex., Thrall.—Schriever, Schlemmer & Fuchs, Taylor, Tex., and A. E. Probst, Thrall, let contract to E. G. Senter & Co., Dallas, to erect 2 store buildings on Main St.; 30.5x90 and 30.5x113 ft., respectively; mill construction; composition roof; electric light; cost \$5,000 each; Henry Struve, Archt., Taylor, Tex.; building material purchased. (Lately noted.)

THEATERS

Ky., Lexington.—Whitton-Wheeler Construction Co., Louisville and Lexington, Ky., has contract to erect theater on Garrett D. Wilson property for Phoenix Amusement Co.; seating capacity 1000; electrical equipment; F. J. Manley, Lexington, and Joseph

& Joseph, Louisville, Ky., Architects. (Lately noted.)

Mo., St. Louis.—Shaw Avenue Investment Co. let contract to W. Denham, St. Louis, to erect 2-story moving-picture theater at 3301-03-05 Shaw Ave.; cost \$20,000.

Okla., Lehigh.—I. O. O. F. let contract to erect lodge and theater building. (See Association and Fraternal.)

Tenn., Clarksville.—Lillian Theater Co. let contract to Elliott & Waddell, Clarksville, to rebuild Lillian Theater; completion by Aug. 15; Joseph & Joseph, Architects, Louisville, Ky. (Previously noted.)

Va., Hampton.—W. W. Scott let contract to R. V. Richardson, Hampton, to erect motion-picture theater on King St.; 30x116 ft.; ordinary construction; gravel roof; steam heat; electric light; cement sidewalk; cost \$11,000; C. Taylor Holtzclow, Archt., Hampton. Address contractor. (Lately noted.)

WAREHOUSES

Ga., Atlanta.—Exposition Cotton Mills let contract to Griffin Construction Co., Atlanta, to erect warehouse; 80x100 ft.; mill construction; tar and gravel roof; maple floors; belt-driven elevator from electric motor; cost \$11,000; Walker & Chase, Architects, Candler Bldg., Atlanta. (Noted in Apr.)

Md., Baltimore.—R. M. Stein has plans by and let contract to Consolidated Engineering Co., 249 Calvert Bldg., Baltimore, to erect warehouse at 412 N. Calvert St.; 156x110 ft.; brick; slag roof; cost \$3500. (Noted in April.)

N. C., Wilmington.—T. S. Southgate & Co. let contract to W. D. Colwell, Wilmington, to erect warehouse; brick and galvanized iron; cost \$3,000.

Tex., Galveston.—Galveston Brewing Co. let contract to erect building at 20th and Mechanic Sts.; 2 stories; lower floor for storage-house; upper floor, apartments; brick; cost \$8,000; contract let.

RAILROAD CONSTRUCTION

RAILWAYS

Ark., Ingleside.—Walker V. Powell of Little Rock and others contemplate building a railroad to connect Ingleside with a trunk line.

Ark., Mountain Home.—Bids will be opened within 10 days for the construction of the first 10 mi. of the Ozarks Railway, which is to be built from Springfield to Little Rock, Ark., via Mountain Home. K. V. Loba of Mountain Home is Pres.; E. C. McAfee of Springfield is Secy. and Treas. (See Manufacturers Record Jan. 28.)

Fla., Bartow.—Contract is reported let by the Seaboard Air Line to A. F. Langford for the extension of the Lake Wales line from Baynard 16 mi. toward Lake Kissimmee.

Fla., Bartow.—Charlotte Harbor & Northern Railroad Co. contemplates building extension from Ridgewood to Bartow, 4 mi. H. D. Mendenhall of Lakeland is making survey. L. M. Fouts is Second V.-P. and Gen. Mgr. at Boca Grande, Fla.

Fla., Panama City.—Richard Tillis of Montgomery, Ala., and others are reported planning construction of an electric railway from Lynn Haven to Panama City, St. Andrews and other points.

La., Alexandria.—Texas & Pacific Railway is surveying for additional yard tracks at Alexandria. C. H. Chamberlain is Ch. Engr. at Dallas, Tex.

La., Bogalusa.—New Orleans Great Northern R. R. Co. contemplates improvements. W. S. Hanley, Bogalusa is Ch. Engr.

La., Rayville.—The proposed railroad southward from Rayville will run, according to present plans, to Alto and Egypt, La., 22 mi. Theo. J. Coenen, Prest. Rayville Progressive League, and others are interested. J. W. Hahn is Secy. (See Manufacturers Record, Feb. 11.)

Miss., Yazoo City.—Walter C. Murphy of Chicago, who proposes to build a railroad from Yazoo City to Carthage, Miss., about 62 mi., is at the Swayze House, and T. P. McDonough, also of Chicago, with a corps of engineers, has begun survey on the line, for which the Yazoo City Council has voted \$50,000. Yazoo Commercial Club, R. H. Douthat, Secy., is also interested.

N. C., Elizabethtown.—Major W. A. Foil, Concord, N. C., says he will build about 3 mi. of additional log railroad near Elizabethtown to reach his timber, but the expenditure will be just sufficient for safety.

N. C., Lenoir.—Carolina & Northwestern Ry. is reported to have let contract to J. W.

Polk of Newton, N. C., to revise grades and curves.

Okla., Muskogee.—Missouri, Oklahoma & Gulf R. R. will, it is announced, build extension Joplin to Kansas City when ballasting to Denison, Tex., is finished. Alex. New and Henry C. Ferris are receivers.

S. C., Charleston.—It is announced that construction of the proposed belt line in North Charleston will begin as soon as materials and men can be assembled. The railroads interested are Atlantic Coast Line, E. P. Pleasants, Ch. Engr., Wilmington, N. C.; Southern Ry., W. H. Wills, Ch. Engr. of Constr., Washington, D. C.; Carolina, Atlantic & Western (Seaboard Air Line System), W. R. Bousal, Prest., Hamlet, N. C. Estimated cost of line, \$60,000.

S. C., Charleston.—Southern Railway Co., it is reported, will soon begin construction of storage yard in connection with its coal-handling plant at Charleston. W. H. Wells, Washington, D. C., is Ch. Engr. of Constr.

Tenn., Butler.—Whiting Lumber Co. will, it is reported, build a standard-gauge railroad from Butler to the summit of the Blue Ridge. J. M. Lacy of Elizabethtown, Tenn., is Supt. of Constr.; W. S. Whiting of Asheville, N. C., and Frank R. Whiting of Philadelphia, are interested.

Tex., Corpus Christi.—J. H. Caswell, of San Diego, Cal., and New York bankers are reported jointly interested in a plan to construct interurban railways, as well as 6 mi.

of street car line at Corpus Christi and vicinity. One line will reach Ward Island, another goes to Portland and a third to the Oso region.

Tex., Fort Worth.—Railroad Construction Co., 80 Fifth Ave., New York, is reported to have contract to complete railroad between Fort Worth and Eagle Pass, Tex.

Tex., Galveston.—Gulf, Colorado & Santa Fe Railway will spend this year \$402,410 for betterments to roadbed and tracks in Texas. F. G. Pettibone is V.-P. and Gen. Man.

Tex., Houston.—Application has been made to the Federal Court for authority to issue \$700,000 receivers' certificates on behalf of the International & Great Northern Railroad, of which \$350,000 will be for improvements. Jan. A. Baker and Cecil A. Lyon, Houston, are receivers.

Tex., Houston.—Houston, Richmond & Western Traction Co. has filed charter for its proposed electric interurban railway from Houston to Richmond, Tex., 25 mi. Location survey to begin immediately. Stockholders include Dr. W. S. Jacobs, T. C. Dunn, Jr., August DeZavala, John O'Neill, H. H. Gelske, Mrs. Lena Gelske, August Bering, C. L. Bering, J. G. Eganhouse, W. W. Thomas, Dr. P. H. Scardino, George P. Macatee, John Roessler, S. H. Pope and Edward Kennedy of Houston. Chester H. Bryan is Attorney.

Tex., Houston.—International & Great Northern R. R. will ask the court for probably \$1,000,000, in addition to \$700,000 other receivers' certificates, for the purpose of making extensive repairs to roadbed and tracks on account of flood damages. James A. Baker and Cecil A. Lyon are receivers.

Va., Norfolk.—Improvements to the railroad at the Norfolk Navy Yard will cost about \$22,000. They consist of laying a few hundred feet of track through paved streets here and there, rebuilding parts of existing tracks; also laying some standard track along the waterfront and putting in frogs and switches. P. M. Watt, Naval Constructor, U. S. N., is Industrial Mgr.

Va., Portsmouth.—About \$25,000 will be spent this year to improve the railroad at the Portsmouth Navy-yard. Address the Commanding Officer.

W. Va., Morgantown.—Buckhannon & Northern Railroad Co. reported to have let contract to Crossan Construction Co. of Brownsville, Pa., for 15,000 cu. yds. excavation on terminal at Morgantown. S. D. Brady, Fairmont, W. Va., is Ch. Engr.

STREET RAILWAYS

Ky., Erlanger.—J. F. Freeman, Mgr., Green Line Street Car Co., is reported saying arrangements have been made to build extension to Erlanger this summer.

Mo., Kansas City.—Metropolitan Street Railway has been authorized to build several extensions at a total cost of about \$52,500. R. J. Dunham and Ford F. Harvey are Receivers.

Okla., Muskogee.—Muskogee Electric Traction Co. Club (no capital stock) is chartered. Incorporators: C. U. Wimmer, Newby Hammer, L. R. Burrill and A. R. Elrod of Muskogee.

Va., Richmond.—Fulton & East Richmond Ry. Co., capital \$1000 to \$50,000, is chartered to build an electric railway from State and Williamsburg Ave. in Fulton to Montrose Heights, about 5 mi., in this (Henrico) county. Construction will begin as soon as franchise is obtained. Dr. E. F. Atwood, Prest.; R. B. Allport, Treas.; other directors are T. H. Ferrand, Jay Lewis, E. W. Tyler and H. H. Chalkley, all of Richmond.

MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

"WANTS"

Air Compressor.—Claude M. McCord, 454 Pryor St., Atlanta, Ga.—Prices on air compressor operated by I. H. P. engine.

Bakers' Supplies.—Basic Machine Co., Basic City, Va.—Bakers' supplies.

Boilers, etc.—Planters' Oil Mill & Gin Co., Kosciusko, Miss.—Bids on steel casings and 3/4 fronts for 4 6 in. x 16 ft. return tubular boilers, with breechings for 4 boilers

to extend from boilers to concrete stack or chimney.

Boilers.—See Corn Mills, etc.—Henry Wolff & Co.

Bridges.—Oklahoma County Commrs., M. Cornelius, County Clerk, Oklahoma City, Okla.—Bids until May 8 to construct following bridges: 20-ft. reinforced concrete arch, about 1320 ft. west of intersection of sections

25-36, Twp. 11 N, Range 3 W; 10-ft. reinforced concrete arch, about 1320 ft. east of intersection of sections 27-28-33-34, Twp. 11 N, Range 4 W.; repair and building addition to steel bridge across Deep Fork River between sections 15 and 16, Twp. 13 N, Range 2 W; remove steel bridge from over Deep Fork River and rebuild in another location across Deep Fork River; plans and specifications office of County Clerk.

Builders' Supplies.—Contractors & Builders' Supply Co., P. O. Box 878, Pensacola, Fla.—To represent manufacturers of builders and contractors' supplies.

Building Supplies, etc.—Merritt J. Glass, Tulsa, Okla.—Prices on all building supplies, electrical fixtures, steam heating equipment and plumbing for \$15,000 store and lodge building.

Building Materials, etc.—Robt. Elsen-schmidt, Archt. and Supt., Savannah, Ga.—Catalogues, etc., of building and other materials of interest to architects.

Building Material, etc.—Thos. Williams, care Jas. E. Rector, 11½ Church St., Asheville, N. C.—Data on all supplies and construction material for dwelling and fire-proof sanitarium.

Building Materials, etc.—East Highland Park Corp., J. B. Blackburn, Secy., 1206 Mutual Bldg., Richmond, Va.—Catalogues and prices on all materials for construction of modern suburban dwellings, street improvements, etc.

Building Materials.—Burkes Construction Co., Hattiesburg, Miss.—Bids by May 11 from sub-contractors and material dealers on all items material required for construction of postoffice at Laurel, Miss.; bids on general contract to be submitted by May 18.

Canned Goods, etc.—Machinist Supply Co., 131 Salem Ave. E., Roanoke, Va.—Prices on canned goods, lard, meat, bottled goods, overalls, gloves, etc., for general store.

Canning Machinery.—See Filling and Labeling Machinery.—L. R. Galdry.

Cars.—Pennsylvania Equipment Co., 503 Coleman Bldg., Philadelphia, Pa.—Two combination passenger, mail and baggage cars.

Cars.—Contractors' Service Co., 50 Church St., New York.—45 flat cars; 25 or 30 tons capacity; steel under-frame; not less than 32 ft. long; prefer Eastern delivery.

Cars.—Pennsylvania Equipment Co., Philadelphia, Pa.—100 to 150 40-ft. flat cars, 80,000 to 100,000 lbs. capacity, preferably latter; second-hand combination passenger and baggage car.

Ceiling Construction.—O. P. Mohr, Archt., 210 Macheca Bldg., New Orleans, La. Interested in flat ceiling construction eliminating beams.

Cellulose.—Tonna & Ghirlando, 28 Boulevard St. Denis, Paris, France.—Cellulose for paper use; for Italian trade.

Cloth Tissues.—Geo. C. Stringo, Piraeus, Greece.—Names and addresses of manufacturers of cloth tissues.

Coal.—Bureau Supplies and Accounts, Saml. McGowan, P. G., Navy Dept., Washington, D. C.—Bids until May 15 for delivering semi-bituminous coal at naval station, Pensacola, Fla.; apply for proposals to navy pay office, Pensacola, Fla.

Coal.—Bureau Supplies and Accounts, Saml. McGowan, P. G., Navy Dept., Washington, D. C.—Bids until May 15 for delivering bituminous, semi-bituminous and steaming coal at navy-yard, Washington.

Coal.—Bureau Supplies and Accounts, Saml. McGowan, P. G., Navy Dept., Washington, D. C.—Bids until May 15 for delivering bituminous and steaming coal at Naval Academy, Annapolis; apply for proposals to navy pay office, Baltimore, or to Bureau.

Coffee Mill Machinery.—O. P. Mohr, Archt., 210 Macheca Bldg., New Orleans, La. Data and prices (for Rely-Taylor Co. plant) on device to consume or dispose of chaff from roasters.

Concrete Gutters.—City of Houston, Tex., Ben Campbell, Mayor.—Bids until May 10 to construct standard concrete gutters on Stratford St. from Baldwin to Taft St.; specifications and information obtainable from E. E. Sands, City Engr.

Concrete Sidewalks.—Comms., A. H. Supple, Secy., Bettendorf, Md.—Bids until May 15 to construct about 2500 lin. ft. concrete sidewalks and necessary grading; specifications, etc., obtainable at office of A. H. Supple, Secy., and office of Kastenhuber & Anderson, Engrs., Easton, Md., for \$1 per set.

Contractors' Equipment.—Postoffice Box 1606, Pensacola, Fla.—Following second-hand equipment: 288 pieces sheet steel piling, 30 to 35 ft. long, and 12 fabricated corners, 30 to 35 ft. long (Lackawanna arch

web preferred); steel concrete tower, 100 ft., no boom; hoist bucket, 30 to 35 cu. ft. capacity; hopper, 36 to 54 cu. ft. capacity (Insley preferred); 100 lin. ft. concrete chute, 8 or 10 in.; concrete mixer, 1 to 1½ cu. yds., with direct-connected steam engine; double-drum hoisting engine, about 40 H. P.; 8-in. centrifugal pump, with steam engine directly connected; intake and discharge pipe for same; give complete data, condition and price f. o. b. shipping point.

Concrete Pile Work.—Ragland-Baxter-Morford Co., Nashville, Tenn.—To correspond with manufacturers of and contractors for concrete pile foundation work.

Concrete Chimney.—Planters' Oil Mill & Gin Co., Kosciusko, Miss.—Bids on reinforced concrete chimney, 125x60 ft.

Contractors' Supplies.—Contractors & Builders' Supply Co., P. O. Box 878, Pensacola, Fla.—To represent manufacturers of contractors and builders' supplies.

Corn and Feed Mills.—C. C. Pyles, Ewing, Ky.—Interested in 22-in. set of buhrs, corn crusher and 10 H. P. gasoline engine.

Corn Mills, etc.—Henry Wolf & Co., Allendale, S. C.—Catalogues and dealers' prices on corn mills, bolters for meal and grist, etc.

Dike Construction.—U. S. Engr. Office, Herbert Deakne, Lieut.-Col., Engrs., Kansas City, Mo.—Bids until May 21 to construct about 5500 ft. standard 3-row timber dike on Missouri River, about 6 mi. below Waverly; information on application.

Dike Construction.—U. S. Engr. Office, Herbert Deakne, Lieut.-Col., Engrs., Kansas City, Mo.—Bids until May 24 to construct about 1000 ft. standard 3-row timber dike and about 5000 ft. standard revetment on Missouri River, 6 mi. below Waverly; information on application.

Dredge.—C. E. Bearce, Captiva, Fla.—To lease or buy 6-in. or 8-in. centrifugal dredge.

Dry Goods, etc.—Machinist Supply Co., 131 Salem Ave. E., Roanoke, Va.—Prices on overalls, gloves, etc., for general store. (See Canned Goods, etc.)

Dynamite, etc.—Panama Canal, F. C. Boggs, Gen. Purchasing Officer, Washington, D. C.—Bids until May 20 to furnish dynamite, blasting caps, motor-driven fire and sewer pumps, cast-iron pipe and fittings, nails, screws, bronze bars, valves, cocks, water gauges, door checks, door bolts, hinges, turn-buckles, tackle blocks, coal shovels, ammeters, voltmeters, doubletrees, drain boards, manila rope, leather, rubber bands and paper; blanks and general information relating to this circular (No. 923) may be obtained from this office or offices of assistant purchasing agents, 24 State St., New York; 614 Whitney-Central Bldg., New Orleans, and 1086 North Point St., San Francisco; also from U. S. Engr. offices in Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash.

Electrical Equipment.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C. Bids opened May 18 on following electrical equipment, delivery Brooklyn, N. Y.; schedule 8224—Annunciators, vibrating bells (W. T. buzzers, etc.), W. T. push-buttons, thermostat frames, contact makers, thermostats (mercurial, etc.); schedule 8249—N. W. T. junction and branch boxes, miscellaneous ceiling electrical fixtures, anchor lights, etc., reflectors (cargo, etc.); electrical supplies and switches (receptacles, etc.); schedule 8248—5000 ft. electrical cable, 75 storage battery jars; schedule 8241—2000 ft. interior communication cable, 24,600 ft. single conductor wire and 2000 ft. twin conductor wire; schedule 8235—50,000 ft. lighting and power wire and 6200 ft. single rubber covered wire.

Electric-light Fixtures.—Bureau of Yards and Docks, Navy Dept., Washington, D. C.—Bids until June 5 for electric-light fixtures for naval hospital buildings, naval station, Pearl Harbor, Hawaii; plans and specifications on application to bureau or to commandant of naval station, Honolulu, Hawaii.

Electrical Fixtures.—Merritt J. Glass, Tulsa, Okla.—Prices on electrical fixtures. (See Building Materials, etc.)

Electrical Machinery.—Claude M. McCord, 454 Pryor St., Atlanta, Ga.—Prices and descriptions on 10 D. C. generators; 10 amperes, 35 volts, 900 to 1200 R. P. M.; also on 10 and 60-ampere hour storage cells.

Electrical Machinery.—See Water-works, etc.—City of Batavia, N. Y.

Elevator.—Tulsa Hospital Assn., 752 W. 5th St., Tulsa, Okla.—Prices on elevator, 6x3 ft., 3-story shaft.

Engine (Gasoline).—C. C. Pyles, Ewing, Ky.—Interested in 10 H. P. gasoline engine.

Engine (Hoisting).—John G. Duncan Co., 308 W. Jackson Ave., Knoxville, Tenn.—Dealers' prices on 10 H. P. double-cylinder double-drum hoisting engine without boiler.

Engine.—Johnson City Lumber & Mfg. Co., T. B. Wallace, Prest., Greenville, S. C.—Estimates on hoisting engine without boiler. (See Woodworking Machinery.)

Engines (Gasoline).—Claude M. McCord, 454 Pryor St., Atlanta, Ga.—Prices on 10 high-speed compact gasoline engines with specifications in detail; 1, 1½ and 2 H. P.

Excavation and Filling.—J. H. Tatum, Miami, Fla.—Bids for excavation of 10,000 yds. rock for wall 2500 ft. long and 315,000 yds. brick and sand fill; will furnish details.

Filling and Labeling Machinery.—L. R. Galdry, New Orleans, La.—Prices on machines for filling and labeling 2-oz. bottles; also on machine to separate seeds and skins from pulp of macerated tomatoes.

Flooring (Pine).—John T. Mason & Co., Hancock, Md.—Hard Southern pine flooring; carloads.

Flour Mill Machinery.—See Machinery, Manufactures, etc.

Foundry Equipment.—Birmingham Stove & Range Co., Birmingham, Ala.—Foundry machines and equipment.

Furnaces (Blane Fixe).—Dr. Jas. M. R. Hard, Park Hotel, Cartersville, Ga.—To correspond with manufacturers of furnaces for blane fixe industry.

Grain Elevator Equipment.—Wesrodt Grain Co., 2601 Ave. A, Galveston, Tex.—Clipper, chop mill, separator for grain, bean cleaner and coffee cleaner; open bids in 60 to 90 days.

Grinding Machinery.—Johnson City Lumber & Mfg. Co., T. B. Wallace, Prest., Greenville, S. C.—Estimates on saw and knife-grinding machinery. (See Woodworking Machinery.)

Grist Mill Machinery.—See Corn Mills, etc.—Henry Wolf & Co.

Hardware.—See Postoffice Equipment.—Sellers & Son.

Heating.—See Plumbing, etc.

Heating (Steam).—Merritt J. Glass, Tulsa, Okla.—Prices on steam heating equipment. (See Building Materials, etc.)

Heating (Hot Water).—B. H. Sprinkle, 422 Union St., Knoxville, Tenn.—Prices on 7 hot-water furnaces. (See Plumbing.)

Hoisting Engine.—See Contractors' Equipment.—Postoffice Box 1606, Pensacola, Fla.

Hooks (Screw, Wire).—See Hosiery and Woollens, etc.—Birnbau & Co.

Hosiery and Woollens, etc.—Birnbau & Co., Scovell Rd., Borough Rd., London, S. E., Eng.—Interested (view to representation) in various manufactures, especially hosiery and woollens, and small wooden articles for household; also wire screw hooks.

Incinerator.—C. A. Werthelmer, City Secy., Victoria, Tex.—Bids for plans, specifications and estimates until May 10 for construction and completion of incinerator; population 7000.

Iron.—Tonna & Ghirlando, 28 Boulevard St. Denis, Paris, France.—Several thousand tons old iron; for Italian Government.

Iron Reservoirs.—E. C. Sasser, Mech. Dept., Southern Ry., Washington, D. C.—To correspond with manufacturers of iron or galvanized reservoirs of material 1-16 in. thick; 5 to 20 gals. capacity; head at each end.

Levee Construction.—Comms. Caddo Levee Dist., Shreveport, La.—Bids until May 12 to construct Red Bayou Levee; contents 72,000 cu. yds.

Levee Construction.—Board of State Engrs., New Orleans, La.—Bids until May 11 to construct following levees on Red River: Willow Chute Levee, Bossier parish, left bank, 54,000 cu. yds.; Starlight Levee, Red River parish, right bank, 16,000 cu. yds.

Levee Construction.—Mississippi River Commission, E. M. Markham, Maj., Engrs., First and Second Dists., Room 20, Customhouse, Memphis, Tenn.—Bids until May 26 to construct about 4,500,000 cu. yds. levee work in Upper and Lower St. Francis and White River Levee Dists.; information on application.

Lighters (Steel).—U. S. Engr. Office, Savannah, Ga.—Bids until May 26 for construction steel lighters; information on application.

Lumber and Veneering.—John S. Reaves, Anniston, Ala.—Prices on poplar lumber and veneering for panel doors.

Machine Tools, etc.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids to furnish machine tools, etc., as follows: Delivery Washington, schedule 8252—Air compressor; delivery Brooklyn, schedule 8253—Automatic grinder, miscellaneous pulleys, etc., band resaw, band saw (2 blades), band saw, swing-type cut-off saw and 2 hand trimmers; delivery Norfolk, schedule 8254—Steam drop hammer; delivery Charleston, schedule 8255—2 heavy-duty engine lathes; delivery Boston, schedule 8256—Forced draft-blower sets.

Machinery.—O. L. Remington, Gen. Mgr., Wm. McLean & Co. (of Melbourne, Australia), 3219 N. Capitol Ave., Indianapolis, Ind. To represent (for Australia) American manufacturers of machinery.

Machinery, Manufactures, etc.—Asbel A. Tejada G. Commercial Importador, Cali, Colombia.—To correspond (view to representation) with manufacturers of macaroni and vermicelli machinery, flour mill machinery, domestic novelties machinery, typewriters to sell at about \$30 and \$100 in gold, hats, shoes, neckties, shirts, stockings, clothing, sewing machines, etc.

Macaroni Machinery.—See Machinery, Manufactures, etc.

Malt.—Tonna & Ghirlando, 28 Boulevard St. Denis, Paris, France.—Interested in purchasing malt.

Metals.—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids opened May 11 on following metals: For delivery Newport, R. I., schedule 8220, 400 lbs. (sheets) phosphor-bronze, miscellaneous manganese bronze, torpedo sheet bronze, torpedo bronze and round monel metal; delivery Charleston, S. C., schedule 8218, 68,000 lbs. deformed bars steel; delivery Washington, schedule 8221, hot-rolled or forged carbon steel and chrome vanadium steel; delivery Boston, schedule 8222, 26,450 lbs. boiler steel plates.

Miscellaneous (Poultry Netting, etc.).—Panama Canal, F. C. Boggs, G. P. O., Washington, D. C.—Bids until May 22 to furnish poultry netting, garbage cans, water coolers, steel griddles, calcimine brushes, paint brushes, scrub brushes, window glass, hose, packing, asbestos gaskets, boiler lagging, cotton canvas, leather belting, marine, metal polish, soap polish, lard oil and Stockholm tar; blanks and general information relating to this circular (No. 921) may be obtained from this office or offices of assistant purchasing agents, 24 State St., New York; 614 Whitney-Central Bldg., New Orleans, and 1086 North Point St., San Francisco; also from U. S. Engr. offices in Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash.

Mixer (Concrete).—See Contractors' Equipment.—Postoffice Box 1606, Pensacola, Fla.

Mop Machinery.—Huntington Broom Mfg. Co., Huntington, W. Va.—Addresses of manufacturers of mop-making machines.

Motor Car.—Moesta & Ruehrwein, Cincinnati, O.—Gasoline motor passenger car or storage battery car with seating capacity 30; new or second-hand.

Motor Sleigh.—Aktiebolaget T. and J. Salvesen, Lauritsala, Finland.—Motor sleigh to tow 8 or 10 sleighs hauling manure; capacity of sleigh, 18 cu. ft.; ground fairly level; deep snow; climate similar to Canada; wants estimates on cost, description; successful motor sleigh would be in great demand.

Moving-picture Machines.—Fred Dowda, Locker, Tex.—To correspond with manufacturers of and dealers in moving-picture machines.

Paving.—Board Comms., Birmingham, Ala.—Bids until May 4 to grade and macadamize and construct curbing, gutters and sidewalk on 39th between 1st and 5th Aves. S.; estimated cost \$5000; 1700 cu. yds. excavation, 1100 sq. yds. cement sidewalk, 1700 lin. ft. cement curb and gutter, 1000 yds. smooth cement gutter and 700 yds. chert; Julian Kendrick, City Engr.

Paving Materials.—See Building Materials, etc.—East Highland Park Corp.

Paving.—City of Rome, Ga.—Bids until May 6 to construct combined concrete curb and gutters and concrete sidewalks as city may order during year ending Apr. 1, 1916; plans and specifications on application Supt. of Public Works; W. M. Gammon, First Commr.; Hugh McCrory, Secy.

Paving.—City of Baton Rouge, La.—Bids on street paving until June 20 (postpone-

ment from May 15; new specifications on application; John J. Munding, City Engr.

Paving.—City of Alexandria, La., Sol. Well, Secy.—Bids until May 19 to pave with vertical fiber vitrified brick Bolton Ave. from Gould Ave. to Lee St., and Lee St. from 2d St. to Bolton Ave.; plans and specifications on file with City Engr.

Paving.—Committee on Streets and Sewers, H. L. Shaner, City Engr., Lynchburg, Va.—Bids until May 6 to improve 2d and 3d Sts. from Madison to Harrison St., Jackson St. from 5th, 1/2 block toward 4th St.; 11th St. from Floyd to Buchanan St., and Poplar St. from Maple to Turnpike St.; 1200 cu. yds. excavation, 300 cu. yds. trench excavation, 4200 sq. yds. granite rubble paving, 2000 lin. ft. stone curbing and 400 lin. ft. sewer pipe; plans can be seen and specifications and proposal forms obtained from City Engr.

Pump (Centrifugal).—See Contractors' Equipment.—Postoffice Box 1606, Pensacola, Fla.

Piping.—See Well Drilling, etc.

Piping, etc.—Columbus Bierce, Box 1043, Memphis, Tenn.—About 2500 ft. second-hand 6-in. cast-iron water pipe to withstand 300 lbs. pressure, and 8 second-hand Corey 2-way hydrants; quote lowest prices f. o. b. cars Memphis.

Plumbing.—B. H. Sprankle, 422 Union St., Knoxville, Tenn.—Prices on 14 bathtubs, 21 closets, 14 washstands.

Plumbing.—Merritt J. Glass, Tulsa, Okla.—Prices on plumbing. (See Building Materials, etc.)

Plumbing, etc.—Augusta Military Academy, Fort Defiance, Va.—Bids until May 18 for plumbing, heating and wiring for barracks and dormitory; T. J. Collins & Son, Archt., Staunton, Va.

Postoffice Equipment.—Sellers & Son, Brooksville, Fla.—Postoffice equipment, including stamping pads, bag racks, wire netting, name plates, wickets, swivels for chairs, etc.

Potassium Carbonate.—Ernest Louis Max, Place Sadi Carnot 4, Marseille, France. For prompt shipment, 50 tons carbonate potassium; cubic offer, c. i. f. Marseille, price in shillings per 1 cwt.

Pump.—Claude M. McCord, 454 Pryor St., Atlanta, Ga.—Prices on power water pump operated by 1 H. P. and larger engine.

Pumping (Sewerage) Equipment.—See Water-works, etc.—City of Batavia, N. Y.

Rails.—Hitchcock Mfg. Co., Frick Bldg., Pittsburgh, Pa.—70 tons 7-in. girder rail, suitable for relaying.

Road Construction.—Wetzel County Commrs., New Martinsville, W. Va.—Bids until May 14 to construct 2 sections dirt road in Grant Dist.; uncompleted portion of road on South Fork at Archer Station, consisting of excavation and fill, and road from Smithfield to railroad crossing east of Folsom; for further information address Blake Taylor, Special Road Engr., Jacksonville, W. Va.; W. T. Francis, Road Commr.

Road Construction.—J. E. Chase, Clerk Marshall County Court, Moundsville, W. Va. Bids until May 28 to grade and macadamize roads in Union Dist.; Fairmont pike, expending \$50,000; grade portion Reilly Hill Rd.; grade and macadamize portion of Boggs Run Hill Rd.; specifications on file with J. E. Chase, Clerk County Court, and T. J. Bartrug, Engr., Alexander Bldg., Moundsville, after May 15.

Road Construction.—Madison County Highway Commission, Marshall, N. C.—Bids until May 25 to grade and drain about 1.7 mi. road; specifications, etc., office of County Road Engr., J. B. Clingman, Marshall.

Road Construction.—Swain County Highway Commrs., Bryson City, N. C.—Bids until May 10 to grade about 8 mi. highway; specifications, etc., on application to T. M. Howerton, Engr., Bryson City.

Road Construction.—Brazoria County Road Dist. No. 6, W. B. Finger, Chrmn., Angleton, Tex.—Bids at office J. H. Dawson, Engr., Alvin, Tex., until May 10 to construct about 30 mi. hard-surfaced road, including grading, bridging and paving; plans and specifications obtainable from Engr.

Road Construction.—Lowndes County Commrs., Hayneville, Ala.—Bids until May 31 to grade, drain and surface with gravel part of Selma and Montgomery Rd. near Benton; expenditure \$1616.26; W. S. Keller, State Highway Engr., Montgomery, Ala.

Road Construction.—Conceh County Commrs., Evergreen, Ala.—Bids until May 24 to grade, drain and surface with sand-clay portion of Evergreen and Andalusia Rd. and of Evergreen and Belleville Rd.; expenditure \$11,585.50; W. S. Keller, State Highway Engr., Montgomery.

Road Construction.—Montgomery County Commrs., Montgomery, Ala.—Bids until May 10 to deposit 5000 cu. yds. gravel near 21-mile post on Carter Hill Rd., and to gravel about 2 mi. of said road; specifications ob-

tainable from Thos. H. Edwards, County Engr.

Road Construction.—Baltimore County Commrs., Chas. J. Fox, Chief Clerk, Towson, Md.—Bids until May 13 to improve 1/2 mi. Bellona Ave., 9th Dist., with concrete (between Riderwood and Ruxton); Chesapeake Ave., 9th Dist., concrete roadway (from Washington Ave. to York Rd.); grade Register Ave., 9th Dist., about 3500 cu. yds.; grade Dolfield Rd., 4th Dist., about 3800 cu. yds.; plans and specifications on file with Roads Engr., W. G. Suero.

Road Repairs.—Navy Dept., Bureau Yards and Docks, H. R. Stanford, Chief of Bureau, Washington, D. C.—Bids until May 15 to repair roads at U. S. Naval Medical School; specifications (No. 2159) on application.

Rollers (Steam Road).—Edwards Construction Co., Tampa, Fla.—Two 10-ton steam rollers; 3-wheel; delivered Leesburg, Fla.

Sanitarium Supplies.—Thos. Williams, care Jas. E. Rector, 11 1/2 Church St., Asheville, N. C.—Data on sanitarium supplies, etc. (See Building Materials, etc.)

Sawmill.—Johnson City Lumber & Mfg. Co., T. B. Wallace, Prest., Greenville, S. C.—Estimates on band sawmill, band rip-saw, circular rip-saws and swing cut-off saws. (See Woodworking Machinery.)

Scales.—Treasury Dept., Office of Electrical Engr. in Charge of Automatic Scales, Washington, D. C.—Bids until June 1 for furnishing and installing automatic weighing and recording scales in accordance with specifications; copies obtainable at discretion of Engr.; this work especially suited for manufacturers of high-grade electrical machinery.

Sewer Construction.—Baltimore (Md.) Board of Awards, City Hall.—Bids until May 12 to construct lateral sewers and house connections in Dist. 46-A, contract No. 153; 33,195 lin. ft. 8-in. and 10-in. sewer and 16,900 lin. ft. house connections; specifications and plans obtainable from Harry W. Rodgers, Secy. of Sewerage Com., 904 American Bldg.; Chas. England, Chrmn.

Sewer Construction.—City of Durham, N. C.—Bids until May 17 for sewer outfall; about 1900 ft. 8-in. and 6900 ft. 12-in. sewer; plans and specifications on file office of H. W. Kuefner, City Engr.; W. G. Bradshaw, Chrmn. Street Com.

Sewer.—Board Commrs., Birmingham, Ala.—Bids until May 4 to construct sanitary sewers near American Cast Iron Co.'s plant, North Birmingham; estimated cost \$13,000; Julian Kendrick, City Engr.

Sewer Construction.—City Commrs., Galveston, Tex.—Bids at office John D. Kelley, City Secy., until May 6 to construct reinforced concrete drain along 37th St. from Ave. H to Ave. F, reserving right to extend same to connection with present drain on 37th at terminus near south line of Ave. B; approximate quantities: From Ave. H to Ave. F, 730 lin. ft. concrete drain, 12 catch-basins, including vitrified pipe connections; 3 manholes, 19,000 B. M. ft. lumber sheet piling; if construction extends from Ave. H to Ave. B: 1980 lin. ft. reinforced concrete drain, 51,500 ft. B. M. lumber sheet piling, 24 catch-basins, including vitrified pipe connections; 6 manholes; also invites bids until same date to construct concrete and vitrified pipe drains and sewers in alleys between Aves. C and E from 28th to 29th Sts.; approximate quantities: 800 lin. ft. 8-in. vitrified pipe sewer, 400 lin. ft. 15-in. vitrified pipe drain, 400 lin. ft. 1-ft. 8-in. by 4-ft. 6-in. concrete drain, and appurtenances; plans and specifications on file with A. T. Dickey, City Engr.; M. E. Shay, Commr. of Water-works and Sewerage.

Sewer Construction.—Town Council, Ravenswood, W. Va.—Bids until May 14 on sanitary sewer system, including about 3200 ft. 6-in., 10,450 ft. 8-in., 1510 ft. 10-in. and 600 ft. 12-in. sewer; 100 ft. cast-iron pipe for outfall; 5900 ft. house connections; Y branches, bends, 6 to 12-ft.-deep excavation, 37 manholes, 5 lamp-holes, flush tanks, etc.; specifications, etc., obtainable from City Recorder or at office of V. A. Dunbar & Son, 418 Julianna St., Parkersburg; J. V. Dunbar, Engr.

Sewerage Pumping.—See Water-works, etc.—City of Batavia, N. Y.

Sewing Machines.—See Machinery, Manufactures, etc.

Silo (Cement).—E. H. Coachman, Clearwater, Fla.—Cement silo to be erected at Blakely, Ga.

Silos.—Prison Commrs., John H. Bickett, Sr., Finance Commr., Huntsville, Tex.—Bids until June 1 to build 35 silos, 200-ton capacity, on 7 of State prison farms; specifications on request.

Steam Plant.—Johnson City Lumber & Mfg. Co., T. B. Wallace, Prest., Greenville, S. C.—Estimates on 200 H. P. steam plant. (See Woodworking Machinery.)

Steel Casings (for Boilers).—See Boilers, etc.—Planters' Oil Mill & Gin Co.

Standpipe Construction.—Board of Water Commrs., Erie, Pa.—Bids for increasing elevation of high service standpipe 40 ft., in accordance with plans and specifications of Chester & Fleming, Engrs., Pittsburgh, Pa.; present standpipe is 25 ft. in diameter and 80 ft. high, and will be increased to 120 ft. height.

Subway.—J. H. Tatum, Miami, Fla.—Bids on subway 30 ft. wide, 40 ft. extreme depth, 15 ft. from base of tunnel to top of arch; length 1200 ft.; will furnish details.

Tank (Steel).—City of Alliance, O.—Elevated steel tank of 40,000 gals. capacity, in accordance with plans and specifications of Chester & Fleming, Engrs., Pittsburgh, Pa.

Thermometer Parts and Machinery.—Jordan Mfg. Co., Lumberton, N. C.—Correspondence with manufacturers of thermometer parts and prices on machinery to make the parts. Address L. B. Blackburn.

Tower (Concrete).—See Contractors' Equipment.—Postoffice Box 1606, Pensacola, Fla.

Water Tanks and Towers.—J. E. Harvell, Chrmn. Water Committee, Petersburg, Va.—Bids until May 17 to construct 2 water tanks and towers; specifications on application to R. D. Budd, City Engr.

Water-works.—Oakdale Cemetery Co., Walker Taylor, Chrmn., Wilmington, N. C.—Bids until May 15 to construct water-works; 2200 ft. 4-in. pipe, 2000 ft. 2 to 3-in. pipe, 12,800 ft. 3/4-in. pipe, 230 garden hydrants, valves, valve boxes, etc.; plans may be seen and specifications secured from J. L. Becton, Engr., Odd Fellows' Bldg., Wilmington.

Water-works.—Xenia Water Co., Xenia, O.—Will invite bids for well connections, temporary pumping station and 16-in. force main; Chester & Fleming, Engrs., Pittsburgh, Pa., preparing plans and specifications.

Water-works.—City Council, Ravenswood, W. Va.—Bids until May 14 on water system, requiring about 1600 ft. 8-in. (30 tons), 9000 ft. 6-in. (150 tons) and 7000 ft. 4-in. (71 tons) cast-iron pipe; 6 tons specials; 25 hydrants; valves and boxes; 2 1200-bbl. cypress tanks; 4 1/2-yd. concrete foundation for tanks; 75 to 80 B. H. P. gas engine; triplex pump, 500 G. P. M. capacity; 2 deep well pumps, fitted for 8-in. casing (wells—65 to 100 ft. deep—to be drilled by city); 100 water meters; bids received for system complete, excepting pumps and gas engine; bids for pumps and gas engine received separately or together; specifications, etc., obtainable from City Recorder or at office of V. A. Dunbar & Son, 418 Julianna St., Parkersburg; J. V. Dunbar, Engr.

Water-works, etc.—City of Batavia, N. Y.—Will invite bids for extensive improvements to water-works and electric-light systems and for changes in sewerage pumping equipment; Chester & Fleming, Engrs., Pittsburgh, Pa., preparing report and estimates.

Water-works Machinery, etc.—Board of Public Works, J. L. Young, Chrmn., Plant City, Fla.—Bids until June 5 for station equipment; 3 plans under consideration; No. 1 specifies 1,500,000-gal. pumping station, 300 cu. ft. air-compressor, 100 H. P. boiler, 200 H. P. feeder, feed pump and air lift; plans Nos. 2 and 3 not so extensive; bids until May 15 to furnish 35 tons 8-in. and 195 tons 6-in. cast-iron pipe, 9 tons special castings, 17 fire hydrants, etc.; until May 15 to drill and case 12-in. well 300 ft. deep for 1000 gals. per minute; specifications and other information obtainable from E. W. Mays, Supt. Water-works; J. B. McCrary Co., Engr., Atlanta, Ga.

Wearing Apparel.—See Machinery, Manufactures, etc.

Well Drilling, etc.—Fritz Fuchs Oil Co., Taylor, Tex.—Receiving bids on drilling and piping.

Well Drilling.—See Water-works Materials.—Board of Public Works, Plant City, Fla.

Wiring.—See Plumbing, etc.

Wire Netting.—See Postoffice Equipment.—Sellers & Son.

Wooden Articles (for Household).—See Hosiery and Woolens, etc.—Birnbaum & Co.

Woodworking Machinery.—John S. Reeves, Anniston, Ala.—Prices on following: Cut-off saw, rip saw, mortiser, groover, band saw, dado head, tenoner and planer; would consider first class second-hand.

Woodworking Machinery.—Johnson City Lumber & Mfg. Co., T. B. Wallace, Prest., Greenville, S. C.—Estimates on rim senders, planers, moulders, band sawmill, and jointers, band rip-saw, circular rip-saws, swing cut-off saws, multiple spindle boring machine, saw and knife-grinding machinery, holting engine without boiler,

automatic spoke machinery, shaving exhaust blower system; felloe planers and 200 H. P. steam plant.

Woodworking Machinery.—Willingham Sash & Door Co., Macon, Ga.—Second-hand fast feed six-roll surfacer, in good condition, with round cylinder, thin knives and truing device.

FINANCIAL NEWS

FINANCIAL CORPORATIONS

Ala., Mobile.—The National City Bank, a conversion of the City Bank and Trust Co. is chartered; capital \$750,000; E. J. Buck, Prest.; A. C. Tonsnoire, Cashr.

Ark., Pine Bluff.—National Bank of Arkansas has made application to organize; capital \$100,000; organizers, C. H. Triplett, Sr., C. H. Triplett, Jr., and R. Carnahan.

Ark., Rogers.—American National Bank chartered; capital \$50,000, which may be increased to \$55,000. Jo. T. Howard will be Cashr. and Albert Moore V-P. Business is to begin about June 1.

Ark., Stuttgart.—C. H. Denslow Co. of Stuttgart has filed articles of incorporation to do a general insurance business; capital \$5000; incorporators, C. H. and E. L. Denslow and Claud B. Hord.

Fla., Melbourne.—Melbourne State Bank will make application for charter; capital, \$20,000. The new institution will succeed the banking business of Bills, Ewing & Neft.

Fla., Pinellas Park.—A building and loan association, capitalized at \$500,000, is being organized. W. M. Dishman of St. Petersburg is interested.

Ga., Athens.—Guarantee Investment & Loan Co. has made application for charter; capital \$100,000; petitioners, Randall S. Freeman, Baltimore; C. H. Phinizy, T. C. Dunlap, J. Warren Smith, E. L. Wilkins, J. J. Wilkins, all of Athens.

Ga., Augusta.—Plaza Investment Co. has filed articles of incorporation; capital \$50,000; petitioners, Henry G. Kale, William Schweigert and Hugh H. Alexander.

Ga., Donaldsonville.—Planters Bank, capital \$25,000, is organized with the following directors: T. J. Shingler, P. S. Spooner, J. L. Dickenson, Dr. John I. Spooner, V. S. Parker, Dr. M. M. Minter and J. E. Johnson.

Ga., East Point.—First National Bank has made application to organize; capital \$50,000. Organizers: J. H. Lipscomb, J. C. Woodward, A. M. Stewart, J. B. McCrary and W. G. Whisenhant.

La., Jennings.—State Bank & Trust Co., capital \$50,000, which will probably be increased to \$75,000, is organized with W. E. Gorham, Prest.; Eugene Houssiere, V-P.; J. L. Block, Cash.

Md., Ocean City.—Bank of Ocean City, capital \$20,000, is being organized by Levin D. Lynch, John M. Mumford, William B. S. Powell, Thomas W. Taylor and Charles T. Jackson.

Miss., Rosedale.—First National Bank of Rosedale is approved; capital \$25,000. This is a conversion of the Bank of Rosedale.

Mo., Osage City.—Bank of Osage City chartered and inceptd.; capital \$10,000. Directors: E. R. Son, John Kremer, Louis Goff, Louis Schnieders, John Wendler, A. A. Speer and others. Business is to begin soon.

N. C., Raleigh.—Union Trust Co., authorized capital \$100,000, is chartered. Inceptors: Fred C. Boyce, Jr., W. George Thomas, John R. Hall, H. T. Macon and H. Perry.

Okla., Tulsa.—Producers' State Bank chartered; capital \$75,000; organizers, J. S. Hopling, C. A. Houston, T. J. Hartman.

S. C., Brunson.—People's Bank of Brunson is granted a commission; capital \$25,000; petitioners, J. W. Campbell and J. E. Peurifoy.

S. C., Columbia.—Homestead Building & Loan Co. chartered; capital \$200,000; W. J. Murray, Prest.; J. M. Sylvian, V-P.; A. E. Heyward, Secy. and Treas.

Tenn., Chattanooga.—The Hibbler Investment Co. has made application for charter; capital \$25,000; incorporators, C. E. Buck, J. R. Barnes, Robt. Hibbler, Jr., William L. Frierson and Silas Williams.

Tex., Abilene.—A new bank is being organized. E. B. Bynum, Prest., First State Bank & Trust Co., is said to be interested.

Tex., Kaufman.—Farmers and Merchants' National Bank has made application to organize; capital \$50,000. Organizers: Geo. W. Smith, Wood Nash, Nestor Morrow, C. H. Allen, T. M. Yorbaugh and Shannon Jones.

[For Additional Financial News, See Page 74.]

Merchants-Mechanics National Bank

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JNO. B. RAMSAY, V.-P. and Chm. Bd. of Dir.
JOHN B. H. DUNN, Cashier.
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First National Bank

RICHMOND, VIRGINIA

Capital and Surplus - - - - - \$3,000,000

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W. M. ADDISON, Cashier.

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Tex., Littlefield.—First National Bank of Littlefield has made application to organize; capital \$25,000; organizers, Rube S. Beard, O. L. Slaton, A. P. Duggan, A. A. Childress, G. C. Wolfarth.

Va., Norfolk.—Church Street Bank is being organized with \$50,000 capital. Benjamin Margollus will be Pres. and Nathan Metzger, Cash.

Va., Petersburg.—Virginia-Carolina Casualty Insurance Agency, Inc.; capital \$1000 to \$10,000; A. S. Cheek, Pres., Charlotte, N. C.; Charles N. Reamine, V.-P.; Joseph McC. Talley, Secy. and Treas., both of Petersburg.

W. Va., Charleston.—The Charleston National Bank, which recently absorbed the National City Bank, has elected the following officers: Isaac Lowenstein, Pres.; J. R. Seal and Dr. J. E. Robins, V.-Ps.; J. S. Hill, Cashr. The new institution has surplus of \$650,000 and assets of over \$400,000.

NEW SECURITIES

Ala., Dadeville.—\$14,000 6 per cent. 10-year water-works bonds are voted. H. E. Berkstresser is Mayor.

Ark., Harrison.—\$60,000 water-works bonds are soon to be placed on the market. Address The Mayor.

Ark., England.—\$22,000 6 per cent. 35-year school bonds recently reported sold, were purchased by Speer & Dow. Address G. M. Morris.

Ark., Helena.—Notice is given that bids were received until 11 A. M. May 5 by directors of Cotton Belt Levee Dist. No. 1, Helena, for \$350,000 6 per cent. 24-year bonds.

Ark., Little Rock.—Bids will be received until May 10 by Rees P. Horrocks, Clerk Board Directors Little Rock School Dist., for \$80,000 20-year bonds.

Ark., Marion.—\$250,000 6 per cent. 12-year bonds Drainage Dist. No. 3, Crittenden County, were purchased by W. R. Compton Bonding Co., St. Louis. W. W. Swepston is Chmn., Board of County Commrs.

Ark., Pocahontas.—Comms. of Road Improvement Dist. No. 1, Randolph county, have sold an issue of road bonds to Meyer Solmson, representing the Althemer & Rawlings Investment Co., St. Louis.

Fla., Bartow.—Bids will be received until 10 A. M. May 11 for \$25,000 5 per cent. 20-year bonds Fort Meade Special School Dist. No. 4, Polk county; denomination \$1000 or \$500; dated June 1, 1915. Address C. A. Parker, Secy. Board of Public Instruction Polk County.

Fla., Clearwater.—The election to vote on \$20,000 6 per cent. 25-year bonds Special School Tax Dist. No. 2, Clearwater, is to be held May 8. Dixie M. Hollins is Secy. Board of Public Instruction.

Fla., Green Cove Springs.—Election is to be held in Clay county to vote on \$50,000 road bonds. C. A. Rudington is Chmn. County Commissioners.

Fla., Jacksonville.—\$500,000 of the \$1,000,000 5 per cent. 30-year bonds Special Tax School Dist. No. 1 will soon be placed on the market. F. A. Hathaway is Supt. Public Instruction.

Fla., New Smyrna.—\$47,000 water-works \$12,000 sewer and \$4000 funding bonds are being offered. Geo. H. Crane is Secy. Board of Public Works.

Fla., Palmetto.—Election is to be held to vote on \$30,000 school-building bonds. Chas. Bennett is Mayor.

Fla., Port St. Joe.—Election is to be held May 27 to vote on \$100,000 school-building bonds. Address School Board.

Fla., Seabreeze.—\$9000 water-works bonds have been purchased by local investors. Address The Mayor.

Fla., St. Petersburg.—Board of Commrs. has denied petition of citizens for an election to vote on \$150,000 Concordium bonds.

Fla., St. Petersburg.—Petition is being circulated asking the Board of Public Instruction, Dixie M. Hollins, County Supt. & Secy., to call an election to vote on \$105,000 school bonds.

Fla., Tavares.—City has decided not to issue any electric-light bonds at present. I. A. Lewis is Mayor.

Fla., Winter Park.—Election is about to be held to vote on \$12,000 town hall, jail and road bonds. Address The Mayor.

Ga., Cedartown.—\$50,000 5 per cent. 30-year school bonds have been purchased at \$1016 premium by J. H. Hilsman & Co., Atlanta.

Ga., Macon.—A dispatch to Manufacturers Record says \$150,000 hospital, \$120,000 street and \$30,000 sewer 4½ per cent. 30-year bonds have been purchased at \$3856.23 premium by Robinson-Humphrey-Wardlaw Co., Atlanta.

Ga., Menlo.—\$12,000 5 per cent. 30-year Menlo School Dist. bonds are voted. Address Board of Trustees.

Ga., Spring Place.—Election is to be held in Murray county May 21 to vote on \$50,000 courthouse bonds. Address County Commrs.

Ky., Catlettsburg.—\$500,000 Boyd county road bonds defeated.

Ky., Grayson.—\$150,000 Carter county road bonds defeated.

Ky., Greenup.—Bids will be received until May 28 for \$50,000 5 per cent. 52-year Greenup County road and bridge bonds. Address J. G. Prichard, County Clk.

Ky., Louisa.—Election is to be held in Lawrence county May 17 to vote on \$100,000 road and bridge bonds. R. A. Stone is Sheriff Lawrence county.

Ky., Mt. Vernon.—\$100,000 5 per cent. 53-year Rockcastle county road bonds will, it is stated, soon be placed on the market. E. R. Gentry is County Attorney.

Ky., Whitley City.—Election is to be held in McCreary county, it is reported, to vote on \$50,000 road bonds. Address County Commrs.

La., Alexandria.—Election is to be held in Rapides parish May 19 to vote on \$16,000 5 per cent. 20-year bonds Poland School Dist. No. 20; \$25,000 5 per cent. 6-year bonds Glenmora School Dist. No. 27. Jonas Rosenthal is Pres. Parish Board of School Directors.

La., Convent.—\$200,000 St. James Parish road bonds are voted. Address Police Jury.

La., Covington.—Election is to be held in St. Tammany parish July 2 to vote on \$2000 bonds School Dist. No. 11. Address Police Jury.

La., Donaldsonville.—\$90,000 5 per cent. Bayou Conway Drainage Dist. bonds are being offered by D. J. Feg, Secy. of Dist.

La., Lafayette.—Bids will be received until 10 A. M. May 29 for \$75,000 5 per cent. road bonds; denomination \$500. A. A. McBride is City Secy.

La., Plaquemine.—\$80,000 5 per cent. 10-year Iberville parish road and bridge bonds have been purchased at \$703 premium by Bank of White Castle at White Castle, La.

La., Thibodaux.—\$80,000 5 per cent. 40-year bonds Road Dist. No. 2, Lafourche parish, are voted. J. L. Bassett is Pres. Police Jury.

La., Vivian.—\$25,000 5 per cent. \$1000 water-works bonds were purchased by Chicago Bridge and Iron Works. J. D. Houston is Clerk.

Md., Cumberland.—\$20,000 5 per cent. Allegany County refunding road bonds have been purchased by Townsend, Scott & Co., Baltimore, at \$100.617 and accrued interest.

Miss., Charleston.—\$25,000 bonds Dist. No. 2, Tallahatchie county, defeated.

Miss., Laurel.—Bids will be received until 2 P. M. May 17 by the Mayor and Board of Commrs. for \$60,000 5 per cent. 20-year \$1000 school, street and water-works bonds. D. F. Gardiner is City Clerk. Further particulars will be found in the advertising columns.

Miss., Yazoo City.—City Council has voted to issue \$50,000 railroad bonds. Address The Mayor.

Mo., Hughesville.—\$5000 Hughesville School Dist. bonds are voted. Address Board of Trustees.

Mo., Jefferson City.—\$4,260,000 bonds Little River Drainage Dist. of Missouri have been purchased by Estabrook & Co., New York; P. W. Chapman & Co., and Bolger, Mosser & Willman of Chicago.

Mo., Joplin.—\$10,000 school bonds are voted. Address Board of Education.

Mo., Joplin.—May 18 election is to be held to vote on \$13,500 viaduct and \$12,500 incinerator 52-year bonds; interest not to exceed 6 per cent. C. A. Robinson is Commr. of Revenue and Hugh McDudor is Mayor. (Previously mentioned.)

Mo., St. Joseph.—\$550,000 10-20-year school and \$25,000 15-year library building bonds St. Joseph School Dist. are voted. A. L. Loving is Dist. Secy.

N. C., Asheville.—Bids will be received until noon May 10 for \$98,000 5 per cent. 20-year \$1000 Buncombe county refunding bonds. J. E. Brookshire is County Treas.

N. C., Bakersville.—The \$30,000 of Mitchell county road bonds, for which bids were received until May 3, are 30-year 5 per cent.; denomination \$100; dated May 3, 1915; maturing May 3, 1945. Address D. W. Tipton, Chmn. Road Commrs., at Street, N. C.

N. C., Burlington.—Election is to be held June 8 to vote on \$40,000 school and \$30,000 city hall \$100 school-building bonds. Jas. P. Montgomery is Secy. and Treas.

N. C., Elizabeth City.—Election is to be held May 25 to vote on \$15,000 school-improvement bonds. Address Board of Education.

N. C., Raleigh.—\$100,000 5 per cent. 30-year Wake county courthouse and jail bonds have been purchased at \$4677.70 premium by H. T. Holtz & Co., Chicago.

N. C., Spencer.—Election is to be held in Roane county May 22 to vote on \$250,000 Spencer Dist. road bonds. Address County Commrs.

N. C., Taylorsville.—All bids received April 26 for \$150,000 5 per cent. Alexander County road improvement bonds were rejected. W. A. Barnett is Register of Deeds to Clk. County Commrs.

N. C., Tryon.—Election is about to be held to vote on \$300 schoolhouse bonds. Address The Mayor.

Okla., Mangum.—Ordinance has been prepared providing for the issuing of \$100,000 6 per cent. electric-light plant bonds voted last Aug.; denomination \$1000; dated May 1, 1915; maturity 1929 to 1935, inclusive. G. F. Border is Mayor.

Okla., Sapulpa.—Election is to be held May 18 to vote on \$150,000 school bonds. Address School Board.

S. C., Columbia.—Bids will be received until noon May 12 for \$250,000 school district bonds; interest 4½ or 5 per cent.; dated May 1, 1915, maturing May 1, 1940. E. S. Dreher is Secy. Columbia School Dist.

S. C., Florence.—Bids will be received until May 19 for \$32,000 40-year school district, \$140,000 30-year refunding and improvement, and \$40,000 20-year improvement 4½ per cent. bonds, which are to be voted on about June 17. W. R. Barringer is Mayor.

S. C., Lancaster.—\$75,000 5 per cent. 20-year Lancaster county past indebtedness bonds were purchased by First National Bank of Lancaster at premium of \$246.25.

S. C., Pickens.—Calhoun School Dist., Pickens county, has voted \$4000 school bonds. Address Board of Trustees.

Tenn., Carthage.—\$15,000 6 per cent. 25-year \$1000 high-school bonds have been purchased at \$800 premium by John Naveen & Co., Chicago. A. C. Read is Mayor.

Tenn., Chattanooga.—Bill is to be introduced in the Legislature providing for an issue of \$100,000 wharf and river terminal bonds. T. C. Thompson is Mayor.

Tenn., Columbia.—Bids will be received until 8 P. M. May 7 for \$30,000 5 per cent. 10-year funding debt \$1000 bonds; dated April 1, 1915; maturing 1925. Address E. E. Erwin, Recorder.

Tenn., Cookeville.—\$25,000 5 per cent. 20-year Tennessee Polytechnic Institute \$500 bonds are voted; dated May 1, 1915; date for opening bids not yet decided. O. K. Holladay is Mayor.

Tenn., Dayton.—\$250,000 5 per cent. 20-year Rhea county road bonds have been purchased by the Security National Bank of Jackson, Tenn., at par and accrued interest.

Tenn., Jackson.—\$20,460 5 per cent. street-improvement bonds were purchased Apr. 29 at par by I. B. Tigrett, Jackson, Tenn.

Tenn., Lawrenceburg.—Bids will be received until noon June 8 for \$20,000 5 per cent. 15-year Lawrence county school bonds. Address Thos. H. Helton, Special County Judge.

Tenn., Manchester.—\$8000 school bonds have been purchased by W. P. Hickerman, Cashr. First National Bank, Manchester.

Tenn., Memphis.—Bids will be received until May 20 by Board of Education, J. P. Norfleet, Pres., for \$350,000 4½ per cent. \$1000 school bonds; denomination \$1000, maturing \$25,000 each year beginning Jan. 1, 1917.

Tenn., Paris.—Bids will be received until 2 P. M. May 17 by R. L. Dunlap, Chmn. Finance Committee, for \$35,000 5 per cent. 125-year water-works \$1000 bonds.

Tenn., Waverly.—\$250,000 Humphreys county road bonds are voted. J. M. Moody is County Judge.

Tex., Austin.—The \$10,000 5 per cent. school bonds reported sold to a St. Louis firm were originally purchased by J. L. Arlitt, Austin, who resold the issue to Whitaker & Co., St. Louis, Mo.

Tex., Austin.—The Attorney-General has approved the following securities: \$100,000 5 per cent. 10-40-year Robertson county road bonds; \$7500 5 per cent. 10-40-year Lockney independent school district bonds; \$7500 5 per cent. 5-40-year Lavaca County bridge-repair bonds.

Tex., Austin.—In addition to the \$600,000 of municipal-improvement bonds to be voted June 9, vote will also be taken on \$150,000 street, bridge and storm-sewer bonds. A. P. Wooldridge is Mayor. (See Manufacturers Record Apr. 29.)

Tex., Columbus.—The \$9000 water bonds to be voted on June 8 are 10-40-year 6 per cent.; denomination \$500. J. J. Mansfield is Judge, Colorado County.

Tex., Cuero.—The \$25,000 5 per cent. DeWitt County road bonds recently voted are 20-40-year 5 per cent. \$50,000 5 per cent. 20-40-year Road Dist. No. 2. DeWitt County bonds have also been voted. Address County Commrs.

Tex., Gonzales.—\$2000 school bonds defeated.

Tex., Haslet.—\$10,000 5 per cent. bonds Tarrant County Consolidated School Dist. No. 97, Tarrant County, defeated.

Tex., Hillsboro.—Bids will be received until 8 P. M. May 18 by W. H. Knight, Mayor, for \$5000 5 per cent. 15-40-year crematory bonds; dated May 1, 1915; maturing 1930, optional after 1930.

Tex., Kaufman.—Bids will be received until 11 A. M. May 21 by Commrs. Court Kaufman County for \$300,000 road bonds Commrs. Precinct No. 3 and \$150,000 road bonds Justices Precinct No. 6, Kaufman County. Interest, 5 per cent. Dated April 15, 1915. James A. Cooley is County Judge. Further particulars will be found in the advertising columns.

Tex., Oakville.—\$40,000 Road Dist. No. 4 Live Oak County bonds are voted. Address County Commrs.

Tex., Somerville.—Bids will be received until 8 P. M. May 11 for \$12,000 5 per cent. 20-40-year \$500 Somerville Independent School Dist., Burleson county, bonds; dated Apr. 1, 1915. Jno. H. Mauer is Secy.

Tex., Taylor.—Bids will be received until 8 P. M. May 10 for \$109,000 5 per cent. \$1000 paving bonds. Address A. V. Hyde, City Clerk. Further particulars will be found in the advertising columns.

Tex., Temple.—Election is to be held June 3 to vote on \$40,000 fire department bonds. Address The Mayor.

Tex., Timpson.—Bids were received until 9 A. M. May 4 for \$17,000 and \$10,000 5 per cent. 10-40-year street-improvement bonds. R. J. Hawthorne is Mayor.

Tex., Victoria.—\$40,000 light bonds are voted. C. A. Wertheimer is City Secy.

Tex., Waxahachie.—Election is to be held in Tellico Dist., Ellis county, May 29 to vote on \$45,000 pike bonds. Address County Commissioners.

Va., Culpeper.—Election is to be held May 29 to vote on \$100,000 5 per cent. 34-year \$500 road bonds for Cedar Mountain Dist., Culpeper county. Address County Commrs.; W. E. Coons, County Clerk.

Va., Dayton.—Bids will be received until noon May 10 (postponed from April 26) for \$24,500 5½ per cent. 10-20-year water, sewer and light bonds; dated June 1, 1915. Address J. H. Rhodes, Clerk. Further particulars will be found in the advertising columns.

Va., Portsmouth.—Bids were received until 3 P. M. May 4 for \$15,000 5 per cent. 20-year bonds Tanner's Creek Magisterial Dist. No. 6, Norfolk county. B. F. Cartwright is Clerk, School Board.

Va., Portsmouth.—The Circuit Court of Norfolk County has granted an extension of 60 days' time for the sale of \$250,000 4½ per cent. 20-year Norfolk county road bonds. It was originally planned to sell the bonds May 1. Alva H. Martin is County Clerk.

W. Va., Fairmont.—Election is to be held in Fairmont Dist., Marion county, to vote on \$100,000 additional road bonds. Address County Commrs.

W. Va., Falling Spring, P. O. Renick.—Dispatch to Manufacturers Record says that \$4500 6 per cent. 20-year \$100 street and sidewalk improvement bonds are voted. J. P. Smith is Mayor.

W. Va., Hamlin.—Election is to be held in Lincoln county May 15 to vote on \$200,000 road bonds. Address County Commrs.

W. Va., Keyser.—Election is to be held in Mercer county May 15 to vote on \$350,000 5 per cent. 30-year \$1000 road bonds. Lowery G. Bowling is Clerk Board of Commrs.

W. Va., Salem.—Election is to be called to vote on bonds for high school. Address Board of Education.

W. Va., St. Marys.—Election is to be held May 11 to vote on \$50,000 Pleasants county high school bonds. Address County Commrs.

W. Va., Wellsburg.—Lubeck Dist., Brooke county, proposes to issue \$47,500 road bonds. Address County Commrs.

W. Va., Wellsburg.—Election is to be held in Brooke county in the fall to vote on \$500,000 road bonds. Geo. C. Wells is Commr.

FINANCIAL NOTES

The Tennessee Bankers' Association at its annual convention last week in Nashville elected officers for the ensuing year as follows: Pres., Samuel T. Jones of Sweetwater; Vice-Pres., A. B. Crouch of Johnson City; Emory Kimbrough of Clarksville, and W. T. Williamson of Mason; Treas., C. E. Taylor of Ducktown. F. M. Mayfield of Nashville was re-elected secretary. A. R. Dodson of Humboldt was elected chairman of the Executive Council.

The Board of Directors of The American Cotton Oil Company, on May 4, 1915, declared a semi-annual dividend of three per cent. upon the preferred stock of the company, payable June 1, 1915, at the Banking House of Winslow, Lauer & Company, 59 Cedar Street, New York City. The Stock Transfer Books of the company will be closed on May 14, 1915, at 3 P. M. and will remain closed until June 2, 1915, at 10 A. M.

JUSTUS E. RALPH, Secretary.

The Civilizing Influence of Advertising

CIVILIZATION is the sum of results of individual influence for the betterment of society. When one man learns and gives his knowledge to his fellow-men he civilizes.

Our nation, although one of the youngest, represents a very high type of civilization. We have used the short road to reach it.

The short road to civilization is that of advertising.

We have come farther by using this road than the older countries have come in centuries on the primitive roads.

Advertising is the medium by which the inventor, chemist, builder or other maker can notify the collective population that he has learned something which will benefit it, and that he has put that knowledge in concrete form, available for its use.

Advertising popularizes, thereby increasing the demand for articles which advance human welfare, until the cost

of production is reduced and the selling price brought within reach of the greater public.

Advertising promotes civilization because it is the medium of quick introduction.

* * * * *

Business paper advertising has been one of the most important divisions of this civilizing force.

It has brought to the maker a method for the creation of demand among the buyers more directly interested. It has brought him knowledge of machines and raw materials which have enabled him to lower manufacturing cost and raise the standard of quality of his product.

It has paved the way for national and newspaper advertising.

It has been the pioneer in extending the frontier of sales.

And what it has been in the past it will continue to be.

Classified Opportunities

MINERAL AND TIMBER LANDS WATER POWERS MISCELLANEOUS PROPERTIES

HAVE YOU A VALUABLE PROPERTY FOR SALE? Farm, timber land, mineral property or any other? We can help you get in touch with possible purchasers by an advertisement in these columns. For rates see head of this department.

FOR SALE—75-Acre Suburban Tract at one-fourth the price of adjoining property in one of the most substantial and rapidly-growing cities in the Carolinas.

300 FEET FRONTAGE on main business street, opposite Postoffice. Large opportunity for profit in either of these properties. Address E. C. Abbott, Charlotte, N. C.

NEARLY 2000 acres, Horry Co., S. C., divided by the A. C. & L. R. R.; improved by store, 35 dwellings, sawmill, ginney and turpentine distillery, all outbuildings. Churches and schools convenient. Showing an income of nearly \$8000 per annum. Price \$100,000.

See me for large Southern acreage, also coal and timber land. Arthur M. Connor, Rooms 223 and 224 Oxford Bldg., Washington, D. C.

5400 ACRES virgin hardwood timber land in East Tennessee; price \$10 per acre. About 300-horse water-power, with 80 acres and improvements, on pike close to Birmingham, Alabama; price \$10,000. Farm Realty Co., 823 Jefferson Co. Bank Bldg., Birmingham, Ala.

CITY PROPERTY

FOR SALE—120 acres in center of city (population 5000); 1800 acres adjoining; magnificent for hotel, subdivision and development; famous resort, creek and springs. Address owner, Doug Aydelott, Tullahoma, Tenn.

MANGANESE ORE

MANGANESE ORE—Eight hundred acres, located on railroad in Arkansas, offered for quick sale at \$10,000. Address owner, Doug Aydelott, Tullahoma, Tenn.

COAL LAND

FOR SALE—Coal lands on railroad in Eastern Kentucky, 24,000 acres, but will divide in parcels to suit. Coals low in sulphur and ash and high in heating value. Address P. O. Box 35, Scranton, Pa.

POLES AND PILING

I FURNISH chestnut poles any length, 20' to 75' oak piling any size. Locust post. Have a good stock of poles on hand at all times, and can make prompt shipments. When interested address E. L. Lewis, Relief, N. C.

FOR SALE—White cedar poles from twenty-five to sixty feet, with 6", 7" and 8" top. Walton & Nixon, Vilas, Fla.

CYPRESS LATHS

I WISH to sell the output of a cypress lath mill, about 80,000 daily capacity; lath to be cut 1 1/2 in. full or 1 1/4 in. if desired. Interested parties please address L. M. McEwen, Hampton Springs, Fla.

TIMBER

REAL TIMBER BARGAIN—50,000,000 ft. 70% N. C. pine, poplar and cypress, all original growth; on Southern R. R. in South Carolina. Liberal terms and low price. J. P. Mulherin (owner), Augusta, Ga.

TIMBER TRACTS WANTED

WANTED—PINE TIMBER—Good yellow pine tracts cruising 5,000,000 to 50,000,000 feet. Send description and lowest price for cash to Lumberman, 14 Coosa St., Montgomery, Ala.

WANTED—To buy tract of first-class white oak timber land, near railroad or navigable stream. B. M. Harvard, 721 Maison Blanche, New Orleans, La.

TIMBER LAND

YELLOW PINE TIMBER FOR SALE—One very large tract, two medium size and several small locations, all in Florida. Chas. B. Harman, Gainesville, Fla.

100,000,000 FEET untouched original growth hardwood timber with large amount of valuable surplusage. Freight advantages to Norfolk, Baltimore and other Atlantic export points estimated at several hundred thousand dollars. 140 miles from Baltimore. No other such proposition within 250 miles. Large portion original grant to the late owners from English Crown. We are owners and prefer direct communication with purchasers. Address Owners, Box 1750, care Manufacturers Record, Balto., Md.

FARM AND TIMBER LANDS

ORIGINAL and second-growth timbers in tracts containing from 500,000 to 50,000,000 feet, all situated on and near large trunk-line railroads. Prices right; terms liberal.

Farm lands below bargain prices, containing from 25 to 5000 acres. Virginian-Seaboard Realty Company, Albemarle, Va.

\$30 PER ACRE—600 acres well-improved land on R. R., 26 miles of Birmingham, on pike road to city; 300 acres open land; more than 300 acres fine rich bottom land; millions of feet of timber; nice creek on place; good house and other building. This land is worth \$50 per acre today. For particulars write J. H. Stewart, Ensley, Ala.

RATES AND CONDITIONS

Rate 20 cents per line per insertion. Minimum space accepted, four lines. Maximum space accepted, 25 lines. In estimating the cost, allow seven words of ordinary length to a line. When the advertisement contains a number of long words, proper allowance should be made. Terms: Invariably cash with order; check, postoffice or express order or stamps accepted. No display type used. Questionable or undesirable advertisements will not be accepted. The assistance of our readers in excluding undesirable advertisements is requested. We reserve the right to refuse any advertisement. No patent medicine, whiskey or mining stock advertisements accepted. Rate for special contracts covering space used as desired within one year as follows: 100 lines, 18c. per line; 300 lines, 16c. per line; 500 lines or more, 15c. per line.

FRUIT, FARM AND TRUCK LANDS

THESE COLUMNS ARE CLOSELY READ BY PEOPLE for information of all kinds about Southern properties of every description. If you have a property of any kind that you want to dispose of, try an advertisement in these columns. Others have to their advantage. For rates see head of department.

ALABAMA

GOOD INVESTMENT—We offer for sale 12,000 acres of best farm, fruit and stock-raising land in solid body, situated only a short distance from Bay Minette in Baldwin county, Alabama.

This land lies well, being level to slightly rolling, with several streams of running water through the tract, making it very desirable for colonization purposes.

This tract can be purchased for the low price of \$7 per acre. Will arrange terms. T. L. Moore & Co., Room 109 Masonic Temple, Mobile, Alabama.

ARKANSAS

FOR SALE—By owner, in Southeastern Arkansas, 200 acres hardwood timber land, partly cut over, good fertile land, 2 1/2 miles from railroad; 35 acres have been in cultivation, and there are 2 houses on it.

1440 acres cut-over but good level bottom land, suitable for grain, alfalfa, cotton, rice or stock farm. Price for both tracts, only \$8.50 per acre. Max Fleischer, 258 Lewis St., Memphis, Tenn.

FLORIDA

I OFFER FOR SALE for sixty days some of the finest fruit and farm lands in Polk county, situated near the city of Lakeland, the best town in the best county in the State of Florida, in tracts of 5000 to 15,000 acres. For quick sale will sell at much less than actual value. It is on railroad. Geo. C. Barton, Lakeland, Fla.

FREE—William L. Larkin's booklet, "The Truth About Florida," with a six-months' subscription (at one-half regular rates) to The Indian River Farmer. Fruit growers, truckers, general farmers, folks interested in Florida, send 25c. to The Indian River Farmer, V-1, Vero, Fla.

25,000 ACRES best marl and hammock land in Cape Sable country, close to railroad and highway; best investment in large tract and good land in Florida. Low price and terms. Write or call on D. S. Jones, Room 7 Real Estate Building, Miami, Fla.

200 ACRES fine citrus land, 4 miles from Fort Meade. The entire tract suitable for oranges and grapefruit. No waste land at all. Price for quick sale, \$20 an acre. Write J. A. Newsome, Fort Meade, Fla.

FLORIDA ORANGE GROVE FOR \$99.—Five minutes' walk from street car to Pensacola, a city of 30,000. 25 cents reserves a grove and brings full particulars with photo album of twenty colored views. Send today, as groves are limited. National Land Sales Company, Box 625, Pensacola, Fla.

FINE BLACK MUCK AND MARL VEGETABLE AND TRUCKING GROUND, 230 acres, fronting 1 1/2 miles on navigable canal with water rights; fronting on hard rock roads, R. F. D. route, at school, 1 mile from shipping station, thousands of acres tomatoes, eggplant, peppers and vegetables of all kinds adjoining; large grapefruit and orange groves all about. Will sell right price if taken quick, or will trade for unimproved income-bearing property. Fine place for grove, stock farm, or very profitable vegetable raising. Now free from debt. G. L. Miller & Company, Miller-Mercer Bldg., 1106 Avenue C, Miami, Fla.

MISSISSIPPI

IS HE CRAZY? The owner of a plantation in Mississippi is giving away a few five-acre tracts. The only condition is that figs be planted. The owner wants enough figs raised to supply a canning factory. You can secure five acres and an interest in the factory by writing Eubank Farms Company, 601 Keystone, Pittsburgh, Pa. They will plant and care for your trees for \$6 per month. Your profit should be \$1000 per year. Some think this man is crazy for giving away such valuable land, but there may be method in his madness.

A 200-ACRE farm on the A. & V. R. R.; well improved; well watered and well located. Cost the owner in 1913 \$7500. Owner forced to sell. Price \$5000. Write A. G. Purvis, Pelahatchie, Miss.

NORTH CAROLINA

FOR SALE—A Farm—280 acres in the finest fruit section in North Carolina in the Iso-Thermal Belt. No frost line. Has two houses, about 500 fruit trees, bearing—room for 5000 trees or more. A man can take the place and in six years it will pay for itself every year thereafter. Terms easy. Walter Bren, Latta Arcade, Room 205, Charlotte, N. C.

FOR SALE—50 to 150 acres valuable land. The Southern Industrial Institute, in order to reduce its indebtedness, will sell 50 to 150 acres of its valuable land close to Chadwick-Hoskins village, and 10 minutes' walk from street-car line. See map and prices at 1001 Commercial Bank Bldg., Charlotte, N. C. P. C. Abbott, Treasurer.

TEXAS

FRUIT LAND.—11,000 acres in the Fort Davis Valley. \$8 per acre to settle an estate; \$1 per acre cash, balance 1 to 10 years. For further description address J. Humphris, Marfa, Texas.

FOR SALE—4500 acres cut-over land, Bowie County, Texas; good agricultural land. Price \$4.25 per acre; terms. Heilbron Investment Co., Texarkana, Texas.

VIRGINIA

VIRGINIA ESTATES.—Colonial homes, plantations, farms, suburban homes, marble pippin orchards, timber lands. Write us for what you want. We have it. R. N. Flanagan & Co., Charlottesville, Va.

\$3500 BUYS IMPROVED FARM, 56 acres; Eastern Shore, Somerset County; 5-room dwelling; new outbuildings; excellently located. P. O. Box No. 68, Bloxom, Va.

ESTABLISHED 1893.—From long experience we are thoroughly familiar with lands and values and have some genuine bargains listed. Tell us what you want and let us submit some special offerings. Southern Farm Agency, Lynchburg, Virginia.

ACREAGE PROPERTY IN VIRGINIA.—1172 acres in Fairfax county, Virginia, within the 9 miles limit from the White House, Washington. Excellent opportunity for development within the next few years. Suburban improvements advancing in that direction. Will sell for cash or exchange for income property. Said to have about \$25,000 worth of timber on the property. Apply to I. H. Saunders, Southern Building, Washington, D. C.

BUSINESS OPPORTUNITIES

FOR SALE—Hardware store, furniture and undertaking establishment, flour mill, farms and timber, factory sites, Md. and Penna. Write W. E. Anderson, White Hall, Md.

FOR SALE—Gas plant, having \$600 per month income with fine margin of profit. Price \$20,000, and is clear of debt. Might take some or all of pay in clear land or income property. Address No. 1746, care Manufacturers Record, Balto., Md.

FLORIDA ORANGE GROVE FOR \$99.—Five minutes' walk from street car to Pensacola, a city of 30,000. 25 cents reserves a grove and brings full particulars with photo album of twenty colored views. Send today, as groves are limited. National Land Sales Company, Box 625, Pensacola, Fla.

\$75 STARTS you in business, selling our adjustable form units for building any size and shape concrete culverts. Cheaper than any other forms. Frick Mfg. Co., Fricks, Pa.

WANTED—Office man with \$10,000 cash to join with successful miller with like amount of cash to rebuild plant of Asheville Milling Company. Address Box 872, Asheville, N. C.

FOR SALE—I know nothing of cotton-mill business, but purchased for \$29,000, at a receiver's sale, the Tarboro Cotton Factory, Tarboro, N. C., costing over \$300,000. I can offer great bargain for part interest to active operator, or entire plant. Henry Staton, 80 Broadway, New York.

WANTED—To lease small foundry, fully equipped, in Virginia, North or South Carolina, for term of five or ten years. State full particulars in first letter. Address T. C. Hess, 129 South Dawson, Raleigh, N. C.

MECHANICAL ENGINEER wants to connect with or form a new company to develop an invention needed on autos, trucks, agricultural machinery and 6 other lines of machinery. Address No. 1747, care Manufacturers Record, Balto., Md.

OWING to broken ties that would make residence painful to owner, will sell or exchange equity in attractive residence, small farm and store property in Virginia, or will lease. Address No. 1754, care Manufacturers Record, Balto., Md.

HAVE A LARGE residential lot subdivided containing two thousand lots adjoining the city of Tampa, Fla. Am desirous of placing this subdivision in the hands of a large selling company, one who will get quick results; prices will be reasonable; improvements will be guaranteed and title perfect. Will pay a commission of 25 per cent. Thos. C. Hammond & Co., 4 and 5 Giddens Bldg., Tampa, Fla.

FOR SALE—At Richmond, Va., in business center, modern and complete office and warehouse; lot 117 feet by 120 feet; main building 5 stories and basement, containing 60,000 square feet of floor space; 2 power elevators; cold-storage room; garage and storage shed; loading platform; independent C. & O. R. R. siding; occupied as a wholesale liquor house; terms easy. Harrison & Bates, 7 N. 11th St., Richmond, Va.

WE ARE CONSULTING ENGINEERS backed by a competent staff and a modern machine plant that can save you money if you are interested in designing or building special machinery, special tools, experimental work, models, etc. If you have patented an article which is not perfected, a consultation with our expert mechanic is at your command. We are giving attention to developing patents and marketing patented articles, especially labor-saving appliances. Our list of office appliances is available. We invite correspondence and will give estimates promptly and cheerfully. Specialty Manufacturing-Sales Corp., Norfolk, Va.

WE HAVE FOR SALE a controlling interest in a metal-manufacturing business established for 30 years; has always paid good profits. Capital stock of the company is \$300,000; rating is the highest credit in the Commercial Agency. Business in 1914 was about \$500,000. Reason for selling, owner of controlling interest is old and wishes to retire from active business. Business is located in Chicago. Full particulars, including public accountant's statement, furnished on application. C. Frank Taylor, 407 Fort Dearborn Bldg., Chicago, Ill.

FOR SALE—Patent No. 1,089,992, pen cleaner, holder and paper weight; size 4x2 inches and 1 1/2 inches deep; weight 14 ounces. The holder is made of steel, glass or brass; the receiving element for the pen is made of corncob pith, which keeps the pen cleaned and free from dust and corroding. The holder will last a lifetime; the pith filler will last 15 days with constant use, then new one is inserted; easy to operate and perfectly sanitary. A real novelty for the desk or counter as well as a necessity for every office. A splendid mail-order specialty or a perpetual advertising novelty. Every user of pen and ink needs it. Big field and large profits. W. T. Tyler, Warsaw, Va.

COLLEGES AND SCHOOLS

RENSSELAER POLYTECHNIC INSTITUTE, TROY, N. Y.—Courses in Civil, Mechanical, Electrical and Chemical Engineering and General Science, leading to the degree of Civil Engineer (C.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Ch.E.), and Bachelor of Science (B.S.). Also special courses. Splendidly equipped new engineering laboratories. Send for catalogue to Registrar.

INTEREST IN COAL-MINING COMPANY FOR SALE

AN UNUSUAL OPPORTUNITY to secure an interest in a splendidly equipped operation in the Pocahontas field, working the original No. 3 seam, 5 feet thick. The management is in the hands of the wealthiest and most successful operators in the field. Over \$400,000 has been spent on the improvements, and the works have never lost a day for want of orders. The large stockholders and directors represent a tonnage of several millions annually and a wealth of many millions of dollars.

Particulars as to the directors and stockholders will be furnished to bona-fide interested parties. The unusual conditions prevailing for the past year compels the owner (a non-resident) to sacrifice the stock, which will be sold for \$50 per share, par value \$100, and it cost that. Terms easy; \$10 per share down and \$10 per share per month. Certificates in one-share lots or any number. Brokers protected. Address No. 1634, care Manufacturers Record, Balto., Md.

Classified Opportunities

WHERE TO SPEND THE SUMMER, MOUNTAIN—LAKE—SEASHORE

IN CHOCORUA, N. H., old house to let in beautiful location, June, July, August; also small camp. Apply to Miss Oliver, North Andover, Mass.

PATENT ATTORNEYS

EUGENE C. BROWN, ENGINEER AND PATENT LAWYER, Suite 40 Victor Building, Washington, D. C. Member Bar U. S. Supreme Court. Patents and Trademarks. Inventions are considered both from Engineering and Legal standpoints in my prosecution of patents. An experience of over 9 years as Examiner in U. S. Patent Office and over 6 years as Patent Expert in important patent suits are my especial qualifications. Reports upon validity and infringement. Send sketch of invention for advice.

VALUABLE INVENTIONS justify only best legal service. Consult Vernon E. Hodges, Attorney-at-Law, Barrister Bldg., Washington, D. C. Practice before the U. S. Supreme Court; all Circuit Courts; Courts of the District of Columbia, and the U. S. and Foreign Patent Offices exclusively. Continuous practice since 1886. Extensive experience with all classes of invention, representing lawyers, manufacturers and inventors in every State.

FREE ADVICE given on U. S. and foreign patents; high-grade inventions only. We serve inventor's interests and sell patents obtained by us on commission. No humbug. Send for booklet. International Bureau of Patents, Inc., 18 Park Row, New York.

PATENTS THAT PROTECT AND PAY. Advice and books free. Highest references. Best results. Promptness assured. Trademarks registered. Watson E. Coleman, Patent Lawyer, 624 F St., Washington, D. C.

PATENTS.—Herbert Jenner, patent atty. and mechanical expert, 606 F St., Washington, D. C. I report free of charge if a patent can be had and its exact cost. Send for circular.

MONEY IN PATENTS.—I secure your patent or return my fee. Manufacturers want Mills patents. Write for free booklet, "How to Get Your Patent and Make Your Profits Thereon." I assist in selling your patent. Mansell F. Mills, Registered U. S. Patent Atty., 22 Com. Nat. Bank Bldg., Washington, D. C.

PATENT YOUR IDEAS.—\$9000 offered for certain inventions; book, "How to Obtain a Patent" and "What to Invent," sent free upon request; send rough sketch for free report as to patentability. We advertise your patent for sale at our expense. Chandler & Chandlee, patent attorneys, 978 F St., Washington, D. C.

C. L. PARKER, Patent Lawyer, formerly member Examining Corps, U. S. Patent Office, 244 G St., Washington, D. C. Patents secured. Patent suits conducted. Reports on the patentability of inventions, the scope and validity of patents, and whether any process or machine infringes existing patents. Reference to prominent manufacturers and pamphlet of instruction furnished upon request.

PATENTS secured or Fee returned. Send sketch for free report as to patentability. Guide book and what to invent, with valuable list of inventions wanted, sent free; \$1,000,000 offered for inventions. Patents secured by us advertised free in World's Progress; sample free. Victor J. Evans & Co., 12 Ninth St., Washington, D. C.

"WORDS OF VALUE TO INVENTORS" sent free; should be carefully read before applying for patents. John R. Woodworth, Registered Atty., Ward Bldg., Wash., D. C.

INDUSTRIES WANTED

MISCELLANEOUS

WEST POINT, VIRGINIA, is ideally located for manufacturers of many lines; rail and water transportation; low freight rates. Investigate. Chamber of Commerce.

LOCATE YOUR PLANT IN MARION, NORTH CAROLINA. Complete railway facilities. Raw material. Cheap fuel. Good labor. Ideal climate. For further particulars address The Board of Trade, Marion, N. C.

WAREHOUSE OR FACTORY BUILDING FOR SALE

FOR LEASE—Warehouse or factory building (on two R. R. tracks, capacity 12 cars), 20,000 feet floor space; electric elevator, two large boilers, one large Corliss engine, air compressor, well, heaters, etc.; 50,000 gallon steel tank; fine for mixed-feed plant, warehouse or general manufacturing purposes. Churchill & Co., Agents, 55 Madison, Memphis, Tenn.

FACTORY SITES

BALTIMORE FACTORY AND TERMINAL SITES.—Statement of Asa G. Candler, President The Coca-Cola Co.: "Investigation convinced us that Baltimore is not only the commercial metropolis for Southern trade, but that it affords shipping opportunities both by water and rail for domestic and foreign traffic superior to any of the great cities in any section of the United States." Locate in Baltimore and derive these advantages. We can provide accommodations to meet your requirements. Wm. Martien & Co., 3 N. Calvert St., Baltimore, Md.

INDUSTRIAL PLANTS FOR SALE

FOUNDRY AND MACHINE SHOPS

FOR SALE—Machine shop and foundry; cheap; long time. Box 310, Memphis, Tenn.

TURPENTINE-ROBIN PLANT

WOOD DISTILLATION. In Lake Charles, La. Wood cheap, abundant. Sell half or all. Exceptional opportunity. Particulars. M. P. Erwin, Lake Charles, La.

ICE AND COLD STORAGE PLANT

ICE AND COLD-STORAGE PLANT FOR SALE.—In Baltimore, a plant suitable for manufacturing, cold storage or storage warehouse, equipped 60 H. P. engine, 3 boilers, 35-ton ice machine, 17 cold-storage closets; 25,000 ft. floor space; Penna. R. R. switch. Chas. E. Ecker, 1316 Munsey Bldg., Balto., Md.

REFRIGERATOR MANUFACTURING PLANT

FOR SALE—Plant manufacturing refrigerators of all kinds. Established 12 years. Will require \$12,000 to \$15,000 to handle control. Reason for selling, owner has other business requiring his attention. Address S. H. Abbott, 535 Arkansas Valley Trust Co. Bldg., Fort Smith, Ark.

FURNITURE-INTERIOR TRIM PLANT

FURNITURE, PANEL, INTERIOR TRIM PLANT.—For quick sale, the best factory in the South for manufacture of panel, furniture or interior trim. Special advantages in rates, taxes, labor, raw material, both yellow pine and hardwoods. Plant is new, fireproof, and insurance rate is 65 cents per \$100. Sale price is less than half the cost. Write for particulars and photographs. J. P. Mulherlin, Trustee, Augusta, Ga.

MATTRESS AND EXCELSIOR PLANT

FOR SALE—Well-established mattress and excelsior plant, situated in a splendid town, and excellent territory; running continuously 20 years; now doing a good business; health of owner only reason for selling. If interested write No. 1729, care Manufacturers Record, Balto., Md.

FURNITURE PLANT

FOR SALE—Well-equipped furniture plant. Two ironclad buildings; 28,000 feet of floor space; machinery first-class condition. Located Sanford, N. C. on four railroads, siding on A. C. L. R. R. and right of way for siding to main line of S. A. L. R. R. Near A. & W. and Southern Ry. stations. Steam power used. Electric power available. Excellent opening. For further particulars address C. C. Cheek and S. P. Hatch, Receivers, Sanford, N. C.

MODELS

MODELS MADE FOR INVENTORS.—General machine work. Designing and perfecting. Developing automatic devices and machinery. In a position to do all kinds of light tool and machine work. Prices reasonable. Estimates cheerfully given. Ideal Machine Works, 64 Ann Street, New York City.

MANTELS AND TILE FLOORS

NORTHCROSS WOOD MANTELS AND TILE FLOORS for every purpose. Sold direct from factory to your home. All orders receive prompt attention. Every contractor should have a copy of our new catalog showing the largest line in America. Mailed free. W. J. Northcross Mantel Company, 75 Union Ave., Memphis, Tennessee.

MEN WANTED

ARE YOU LOOKING FOR A GOOD MAN? There are a number looking for you. You can get together through an advertisement in these columns. Try it. For rates and other information see block at head of department.

A MANUFACTURER of a nationally-known power transmission requisite desires further representation in the South, especially in Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Northern Louisiana, Oklahoma and Missouri. The product is an absolute necessity in every mill, and it is simply a question of selling an article of reputation to customers in competition with other manufacturers. Address No. 1744, care Manufacturers Record, Balto., Md.

WANTED—Resident agent in Baltimore, Lynchburg, Richmond, Roanoke, Norfolk, Raleigh, Augusta, Wilmington, Charleston, Savannah, Atlanta and Jacksonville to represent glass bottle manufacturer; can be handled as side line; only men with selling ability need apply. Address No. 1738, care Manufacturers Record, Balto., Md.

IF QUALIFIED for executive, technical, mechanical, professional or administrative position carrying salary between \$2500 and \$12,000, write undersigned counsel, through whom strictly confidential preliminaries will be negotiated for important appointments. Send address only for prefatory details. R. W. Bixby, Lock Box 134-34, Buffalo.

REPRESENTATIVES to cover territory more thoroughly. Boiler-room necessities; liberal commissions; old-established house. Apply by letter. H. F. Maurel, 534 West 23d St., New York City.

AGENTS—Salary or commission. Greatest seller yet. Every user pen and ink buys on sight. 200 to 500 % profit. One agent's sales \$630 in 6 days; another \$32 in 2 hours. Monroe Mfg. Co., X-130, La Crosse, Wis.

PARTNER WANTED

WANTED—Partner with \$500 to install electric-light plant in growing town in Florida. Box 614, Lakeland, Fla.

AGENCIES WANTED

WANTED—Manufacturers' Agency in Miami, Fla., by young married man with family. Best of references as to ability, character and habits. No money proposition wanted. Address No. 1758, care of Manufacturers Record, Baltimore, Md.

WANTED—Sales agency for all lines pertaining to builders' specialties; East Tennessee as territory; can furnish satisfactory references to interested concern; modern warehouse facilities. Address Daniel Briscoe, Jr., 325-327 State St., Knoxville, Tenn.

THOROUGHLY CAPABLE man of unquestioned character and qualifications desires to act as manufacturers' agent in Norfolk, Va., and adjacent territory for all lines pertaining to Builders' Specialties; good territory. Address Manufacturers' Agent, P. O. Box 722, Norfolk, Va.

WANTED—Position as district representative or general sales agent. Memphis or Little Rock with adjacent territory; any other good location, or any good line considered. Previous occupation, salesman wholesale and retail general supply house, office manager, auditor wholesale grocery with chain of retail stores. I am a certified public accountant at present. Age 29. Desire more active employment. Good organizer. Best reference Memphis business men and Mississippi, Arkansas and Tennessee planters, oil-mill owners and merchants. Bond, any amount up to \$50,000. Address C. P. A., Box 541, Memphis, Tenn.

SITUATIONS WANTED

POSITION DESIRED as superintendent or manager in a factory manufacturing chairs or furniture specials; 23 years' experience in all its branches, from log to marketing the goods. Can furnish the very best of references as to habits, ability and integrity, and also as a producer. Age 43. Investigate. Address No. 1752, care Manufacturers Record, Balto., Md.

CONTRACTOR, graduate engineer, seven years' experience on heavy concrete and excavation work, desires to locate in South with established contracting business. Will consider office or outside position. Can handle labor and is particularly good buyer. No. 1751, care Manufacturers Record.

WANTED—Position by young married man; ten years' experience as accountant; capable of handling credits and financial end of business; coal or lumber business preferred; can accept immediately. Address No. 1699, care Manufacturers Record, Balto., Md.

HIGHLY CAPABLE MAN, age 32, desires connection with reliable manufacturer as branch manager or division sales executive; possesses enviable record of success, productive ideas, sound business judgment and a widespread acquaintance among the jobbing hardware, sporting goods, auto accessory, vehicle, implement, railway and mill supply trades throughout the entire South and Southwestern States, also Mexico; good command also of English, German and Spanish languages. Address No. 1749, care Manufacturers Record, Balto., Md.

SALESMAN, age 31, 10 years' experience in general mechanical lines, structural, iron, steel, malleable castings, drop and hammered forgings, wants position in selling, buying or executive end of reliable company; will locate or travel anywhere. Address No. 1745, care Manufacturers Record, Balto., Md.

LETTERHEADS, PRINTING, ETC.

LITHOGRAPHED Letterheads; at low cost—5000, \$2 per M; 10,000, \$1.75 per M; 25,000, \$1.40 per M. Nominal engraving charge on 1st order; quality guaranteed. Write for samples on your own letterhead. Monach Lithographing Co. (Dept. E), Minneapolis, Minn.

QUALITY STATIONERY at moderate prices. 1000 good bond letterheads, printed to order, \$2. Sample booklet of attractive letterheads on request. Commercial Art Press, Box 356, Beaver Falls, Pa.

\$1.50, 1000 Bond Letterheads; 5M, \$6; Billheads and Statements, same price; 1000 6% XXX Envelopes, \$1.75. Send for samples. A. W. Beveridge & Co., Printers, 111 Mercer St., Baltimore, Md.

IMITATION TYPEWRITTEN LETTERS, lowest rates. Multigraph Printing Co., Beaver Springs, Pennsylvania.

1000 HAMMERMILL Bond Letterheads, \$1.50; 5000, \$5. 1000 Envelopes, \$1.75. Billheads, Statements, Tags, etc. Samples free. S. I. Meseraul, 945 Central Ave., Dept. A, Kansas City, Kans.

REBUILT TIME AND COST KEEPING RECORDERS

TIME CLOCKS, Dey and International bi-chrome machines, calculagraphs, cost-keeping recorders; everything in time clocks and supplies. R. G. Watkins, 9 Church St., N.Y. City.

MACHINERY AND SUPPLIES

GRANULATED CORK

FOR SALE—50 tons pure granulated cork, cheap. Apply New Orleans Cold Storage & Warehouse Co., Ltd., New Orleans, La.

EXCELSIOR MACHINES

ALWAYS market and highest prices for the long fiber dustless grades of excelsior made with the late improved machines manufactured by W. S. Minor, Northville, N. Y.

BANK AND SAFE DEPOSIT VAULTS AND SAFES

FIRE PROOF

BURGLAR PROOF

YORK SAFE & LOCK COMPANY
YORK, PA. BALTIMORE, MD.

PROPOSALS

BOND ISSUES

BUILDINGS

PAVING

GOOD ROADS

PROPOSALS FOR DYNAMITE, SAFETY
Fuse, Blasting Caps, Detonators, Motor-driven Fire and Sewer Pumps, Cast-iron Pipe and Fittings, Steel Cable Boat Spikes, Track Spikes, Nails, Screws, Babbitt Metal, Sheet Brass, Bronze Bars, Copper Bars, Brass Tubing, Copper Tubing, Sheet Lead, Lead Pipe, Solder, Valves, Cocks, Water Gauges, Door Checks, Door Bolts, Hinges, Turnbuckles, Tackle Blocks, Coal Shovels, Ammeters, Voltmeters, Doubletires, Drain Boards, Manila Rope, Leather, Rubber Bands, and Paper. Sealed proposals will be received at the office of the General Purchasing Officer, The Panama Canal, Washington, D. C., until 10.30 A. M. May 20, 1915, at which time they will be opened in public, for furnishing the above-mentioned articles. Blanks and general information relating to this Circular (No. 923) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City; 614 Whitney-Central Building, New Orleans, La., and 1086 North Point Street, San Francisco, Cal.; also from the U. S. Engineer Offices in the following cities: Seattle, Wash.; Los Angeles, Cal.; Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala., and Galveston, Tex.; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash. F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

PROPOSALS FOR POULTRY NETTING,
Garbage Cans, Water Coolers, Cuspidors, Chair Seats, Chinaware, Glass Pitchers, Steel Griddles, Calcimine Brushes, Paintbrushes, Scrub Brushes, Sponges, Crayons, Window Glass, Toilet Paper, Hose, Packing, Asbestos Gaskets, Boiler Lagging, Cotton Canvas, Leather Belting, Marine Calcium Carbide, Metal Polish, Soap Polish, Lard Oil, and Stockholm Tar. Sealed proposals will be received at the office of the General Purchasing Officer, The Panama Canal, Washington, D. C., until 10.30 A. M. May 22, 1915, at which time they will be opened in public, for furnishing the above-mentioned articles. Blanks and general information relating to this Circular (No. 923) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City; 614 Whitney-Central Building, New Orleans, La., and 1086 North Point Street, San Francisco, Cal.; also from the U. S. Engineer Offices in the following cities: Seattle, Wash.; Los Angeles, Cal.; Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala., and Galveston, Tex.; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash. F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

PROPOSALS FOR ICE AND REFRIG-
erating Plant, Motor-driven Lathes, Drill Presses, Shapers, and Sensitive Drills, Galvanized Hinge Roll, Wire Lath, Rivets, Bolts, Nuts, Washers, Nails, Sheet Brass, Valves, Compression Grease Cups, Oil Cans, Rubber Bands, Rulers, Manila Tags, Zinc Sulphate, Lumber, and Switch Ties. Sealed proposals will be received at the office of the General Purchasing Officer, The Panama Canal, Washington, D. C., until 10.30 A. M. May 27, 1915, at which time they will be opened in public, for furnishing the above-mentioned articles. Blanks and general information relating to this Circular (No. 924) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City; 614 Whitney-Central Building, New Orleans, La., and 1086 North Point Street, San Francisco, Cal.; also from the U. S. Engineer Offices in the following cities: Seattle, Wash.; Los Angeles, Cal.; Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala., and Galveston, Tex.; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash. F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

TREASURY DEPARTMENT, Supervising
Architect's Office, Washington, D. C., May 3, 1915. Sealed proposals will be opened in this office at 3 P. M. June 14, 1915, for the construction, complete (including mechanical equipment, lighting fixtures and approaches), of a one-story, basement, and mezzanine, brick and stone-faced building of 3450 square feet ground area, partly fireproof construction, tin roof, for the United States postoffice at Marlin, Tex. Drawings and specifications may be obtained from the custodian of the site at Marlin, Tex., or at this office, in the discretion of the Supervising Architect, JAS. A. WETMORE, Acting Supervising Architect.

TREASURY DEPARTMENT, Supervising
Architect's Office, Washington, D. C., April 21, 1915. Sealed proposals will be opened in this office at 3 P. M. June 2, 1915, for the construction, complete (including mechanical equipment, interior lighting fixtures and approaches), of the United States postoffice at Longview, Tex. Drawings and specifications may be obtained from the custodian of site at Longview, Tex., or at this office, in the discretion of the Supervising Architect, JAS. A. WETMORE, Acting Supervising Architect.

PROPOSAL ADVERTISING INFORMATION

RATE: 20 cents per line per insertion.

PUBLICATION DAY: Thursday.

FORMS CLOSE 9 A. M. Wednesday. Copy received later cannot be published until issue of following week.

NIGHT LETTER: When too late to send copy by mail to reach us by 9 A. M. Wednesday, forward by night letter.

THE DAILY BULLETIN OF THE MANUFACTURERS RECORD:

Published every business day: gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened, or when daily publications are necessary to meet legal requirements.

The same rate applies—20 cents per line per insertion.

U. S. ENGINEER OFFICE, Wilmington,
N. C., April 26, 1915. Sealed proposals for furnishing and delivering about 19,700 tons of crushed stone will be received at this office until 1 P. M. May 26, 1915, and then publicly opened. Information on application. H. W. STICKLE, Maj., Engrs.

U. S. ENGINEER OFFICE, Wilmington,
N. C., April 26, 1915. Sealed proposals for furnishing and delivering about 22,000 barrels of Portland cement will be received at this office until 12 M. May 26, 1915, and then publicly opened. Information on application. H. W. STICKLE, Maj., Engrs.

\$16,000 Road Bonds

Jackson, N. C.
Sealed bids will be received until 10 o'clock A. M. May 18, 1915, for \$16,000 Jackson Township Road Bonds. Address

G. A. MOORE,
Secy. Board of Road Commissioners,
Jackson, N. C.

\$15,000 6% Bonds

Gulfport, Miss.
Sealed bids will be received on June 7, 1915, by the Board of Supervisors of Harrison County, Miss., for \$15,000 6 per cent bonds of Mississippi City Rural Separate School District. Certified check for \$200, payable to order of A. J. Bond, Pres. of Board, to accompany bids. Usual rights reserved.
JOHN J. MURPHY, Clerk.

\$665,000 Collin County (Texas) Road Bonds

CHANGE OF DATE.
INT. 5%, SEMI-ANNUAL, 20-40.

McKinney, Tex., April 17, 1915.

Sealed proposals will be received and opened at noon May 6, 1915, for all or any part of the \$665,000 bonds by the Commissioners' Court of Collin County or J. L. Franklin, County Auditor, McKinney, Texas. Certified check for 2 per cent. of bid must accompany same. Printed circulars containing definite and detailed information will be furnished on application.

J. L. FRANKLIN, County Auditor.

\$450,000 5% Bonds

Kaufman, Texas.
The Commissioners' Court of Kaufman County, Texas, will, until Friday, May 21, 1915, 11 o'clock A. M., and then open, at Kaufman, Texas, receive sealed bids for the purchase for cash of \$300,000 Road Bonds of Commissioners' Precinct No. 3, and also of \$150,000 Road Bonds of Justice Precinct No. 8, of Kaufman County, Texas. Said bonds are dated April 15, 1915, and bear interest at the rate of 5 per cent, payable semi-annually. Bids must be made separately for each issue. Each bid must be accompanied by a certified check in an amount equal to 2 per cent. of the bid, payable to order of the undersigned. The Court reserves the right to reject any or all bids.

JAMES A. COOLEY,
County Judge Kaufman County,
Kaufman, Texas.

\$60,000 5% Bonds

Laurel, Mississippi.
Sealed proposals will be received and opened by the Mayor and Board of Commissioners of the City of Laurel, State of Mississippi, in the Mayor's office at the City Hall, on the 17th day of May, 1915, at 2 o'clock P. M., for the purchase of \$60,000 5 per cent. 20-year coupon bonds, interest payable semi-annually. Bonds in denominations of \$1000 each. Said bonds to build schoolhouses, street improvement and water-works improvement and extension. Bonds to be lithographed and furnished by purchaser. Each bid must be accompanied by certified check for \$500, addressed to the undersigned. The right to reject any and all bids is hereby reserved. Published by order of the Mayor and Board of Commissioners of the City of Laurel, Mississippi, this the 4th day of May, 1915.

D. F. GARDINER,
City Clerk.

\$24,500 5½% Bonds

Dayton, Va.
Sealed proposals will be received by J. L. Fuqua, Mayor, until May 10 at 12 noon for the purchase of \$24,500 5½ per cent. 10-20-year optional Water, Sewer and Light bonds. Dated June 1, 1915.

Bonds bear interest at the rate of 5½ per cent. per annum, payable semi-annually. Bonds are of \$500 denomination and mature in 20 years, optional after 10 years. The Town reserves the right to reject any and all bids.

Certified check for \$500 must accompany all bids.

J. H. RHODES, Clerk.

\$100,000 5% Bonds

Greenville, S. C.
Sealed bids at not less than par will be received by the undersigned until noon May 10, 1915, when they will be opened, for the purchase of one hundred thousand (\$100,000) dollars coupon bonds, to be dated July 1, 1915, and to mature July 1, 1945, without option of prior payments; bonds to be in the denomination of one thousand (\$1000) dollars each, and to bear interest at not exceeding five (5%) per cent. per annum, payable semi-annually; both principal and interest payable at some responsible bank in the city of New York; sixty thousand (\$60,000) dollars of said bonds to be used for the purpose of erecting or repairing Courthouse; thirty thousand (\$30,000) dollars for the purpose of erecting or repairing Jail; ten thousand (\$10,000) dollars for the refunding of Air Line Railway aid bonds. The approving opinion of Storey, Thorndyke, Palmer & Dodge of Boston as to the legality of said bonds will be furnished. All bids must be accompanied by a certified check, with no conditions endorsed on same, except the legality and regularity of said issue, payable to the order of the undersigned, in the sum of twenty-five hundred (\$2500) dollars, and drawn on some bank in Greenville, S. C., as a guarantee that the purchaser will take up and pay for the bonds as soon as same are signed and ready for delivery, and in case the purchaser should fail to pay for said bonds within ten (10) days after they are ready for delivery, the required deposit will be forfeited to the county. The right is reserved to reject any or all bids.

W. H. WILLIMON,
Supervisor, Greenville County, S. C.
April 10, 1915.

Highway

Bryson City, N. C.
Sealed proposals will be received and opened at Bryson City, N. C., by the Swain County Highway Commission May 10, 1915, at 2 P. M. for the grading of approximately eight miles of highway. Each bid is to be accompanied by a certified check of \$500. Specifications and further particulars will be furnished to responsible parties upon application to T. M. Howerton, Engineer, Bryson City, N. C.

Concrete Sidewalks

Betterton, Md.
Sealed proposals will be received at the office of the Commissioners of Betterton, Maryland, at 8 o'clock P. M. on the fifteenth (15th) day of May, at which time and place the bids will be publicly opened and read. The work to be done consists of supplying all labor and material for the construction of about 2500 lineal feet of Concrete Sidewalks and the necessary grading for the same.

Contract, specifications and blank form of proposal may be obtained at the office of the Secretary of the Commissioners at Betterton, Maryland, and at the office of Kastenhuber & Anderson, Engineers, Easton, Maryland. Plans may be obtained upon the payment of one dollar (\$1) for each set. Each proposal submitted must be accompanied by a certified check drawn to the order of the Commissioners of Betterton, Maryland, in the sum of one hundred dollars (\$100).

The Commissioners reserve the right to reject any or all bids.

A. H. SUPPLEE,
Secretary.
KASTENHUBER & ANDERSON,
Engineers,
Easton, Maryland.

Street Paving

Anderson, S. C.
Sealed proposals on blank forms furnished by the city and addressed to the Board of Paving Commissioners will be received until noon May 11, 1915, for furnishing all material, labor, etc., for street paving.

The work will consist of approximately seventy-five thousand (75,000) square yards of street paving, including all classes.

Each bid must be accompanied by a certified check, made payable to the City Clerk and Treasurer, for five (5%) per cent. of price bid.

The right is reserved by the Board of Paving Commissioners to reject any, or all, or any portion of bids.

Specifications can be had and additional information gotten at the office of the City Engineer, Anderson, S. C.

W. A. SANDERS,
City Engineer.
J. H. GODFREY,
Mayor.

Concrete Work

Bids will be received in the office of the Levee Board, Clarksdale, Miss., till 4 P. M. May 12 for concrete work, to wit:

A continuous plain concrete slab 3 inches thick, to be laid on the river side slope of the Levee, in DeSoto county, Miss. (1) Near Lakeview; from Station 19 on Levee Section 1 to Station 83 on Section 2, length 64 stations, containing approximately 43,000 square yards. (2) Near Lake Cormorant; from Station 567 on Levee Section 11, over all of Section 12, to Station 645, Section 13, length 78 stations, containing approximately 42,000 square yards. (3) From Station 663, Section 13, to Station 678, same section, length 15 stations, containing approximately 10,000 square yards. (4) From Station 686, Section 14, to Station 737, length 47 stations, containing approximately 30,000 square yards. (5) From Station 751, Section 15, to Station 774, length 23 stations, containing approximately 13,000 square yards.

Bids should be made per square yard. For detail information apply to the undersigned.

T. G. DABNEY, Chief Engineer,
Clarksdale, Miss.

Highway

CHANGE OF DATE.

McKinney, Texas, April 17, 1915.
Sealed proposals will be received by the Commissioners' Court of Collin County, Texas, for the construction of about 12 miles of public highway, viz., in Road District No. 4 about 70 miles, in Road District No. 8 about 40 miles, and in Road District No. 9 about 20 miles, on or before noon May 7, 1915.

Bids to be on the unit basis for the construction of macadam, gravel, and concrete roads. Certified checks of \$5000 on Road Dist. No. 4, \$3000 on Road Dist. No. 8, and \$2000 on Road Dist. No. 9.

For plans and specifications write John Mead, County Engineer of McKinney, Texas.

Road Grading

Marshall, N. C.
Sealed bids for grading and draining approximately 1.7 miles of road will be received by the Madison County Highway Commission at their office in Marshall, N. C., until 2.30 o'clock P. M. Tuesday, May 25, 1915.

Profiles and specifications may be seen in the office of the County Road Engineer, Marshall, N. C.

Each bid must be accompanied by a certified check for \$350 as an evidence of good faith and that the bidder will enter into contract, if awarded same, within fifteen days; and in case he fails to enter into contract and furnish satisfactory bond within the specified time, his check is to be forfeited to the Madison County Highway Commission. The right is reserved to reject any or all bids.

J. B. CLINGMAN,
County Road Engineer.

Highway

Frederick, Md.
Sealed proposals, addressed to the County Commissioners of Frederick County, and endorsed "Proposals for building a section of State-aid highway in Frederick county," upon or along the road from the State Road at the finger board to Hyattstown, the road between the finger board and Pleasant Grove Schoolhouse, for a distance of about 1½ miles, will be received by the County Commissioners of Frederick County at their office in Frederick, Md., until 12 o'clock noon of the 11th day of May, 1915, and at that time and place will be publicly opened and read. All bids must be made upon blank forms to be obtained of the State Roads Commission at its office, 534 N. Howard St., Baltimore, Md.; must give the prices proposed both in writing and in figures, and must be signed by the bidder, with his address. Each bid is to be accompanied by a certified check for two hundred dollars (\$200), payable to the County Commissioners of Frederick County, said check to be returned to the bidder unless he fails to execute the contract should it be awarded to him. Plans can be seen and forms of specifications and contract may be obtained upon the cash payment of one dollar (\$1) at the office of the State Roads Commission, Baltimore, Md. The County Commissioners of Frederick County reserve the right to reject any and all proposals.

By order of County Commissioners.
JOHN W. HOLTER, Pres.
H. L. GAVER, Clerk.

PROPOSALS

SEWERS

WATER-WORKS

ELECTRIC LIGHT PLANTS

BRIDGES

Highway

Franklin, La.

Sealed proposals will be received and opened by the Road Commission of the Parish of St. Mary, La., on May 17, 1915, at one o'clock P. M., for the furnishing of material and the construction of approximately fifty miles of surfaced highway.

Plans and specifications will be furnished to responsible parties upon application to W. H. Latham, Secretary of Road Commission, Franklin, La.

Street Paving

STREET DEPARTMENT.

Charleston, S. C., April 16, 1915.

Sealed proposals in duplicate will be received at this office until 1 P. M. Tuesday, May 18, 1915, for 65,000 square yards, more or less, of paving on concrete base, of which it is estimated that 20,000 square yards to 25,000 square yards will be Cressed Wood Block, and the remainder Sheet Asphalt, Asphaltic or Bituminous Concrete or Bitulithic. Specifications will be furnished prospective bidders upon receipt of \$5 as guarantee for their return. The right is reserved to reject any or all bids.

J. H. DINGLE,
City Engineer.

Paving

Baton Rouge, La., April 16, 1915.

Sealed bids will be received by the Commission Council of Baton Rouge, La., up to 12 o'clock Monday, May 15, 1915, for laying approximately 170,000 sq. yds. Bituminous Gravel Pavement with concrete curb and gutter, sub-surface drainage, etc.

Also, approximately 22,000 sq. yds. hard-surface pavement on concrete base.

A certified check of \$5000 (five thousand dollars) must accompany each bid on the gravel pavement, and a certified check for \$1000 (one thousand dollars) must accompany bids on the hard-surface pavement.

Specifications and blank form of proposal may be obtained on application.

The city reserves the right to reject any or all bids.

JOHN J. MUNDINGER,
City Engineer.

NOTICE OF POSTPONEMENT.

The date of receiving proposals for street paving for the City of Baton Rouge, La., for May 15, 1915, has been extended to June 21, 1915. New specifications will be sent on application.

JOHN J. MUNDINGER.

Water Mains and Fittings

Belzoni, Miss.

Notice is hereby given that the Board of Mayor and Aldermen of the Town of Belzoni, Washington county, Mississippi, will receive until 10 o'clock Tuesday A. M., the 18th day of May, 1915, sealed proposals for the following approximate amounts of work and material, to wit:

Furnishing and installing 8000 feet of four-inch cast-iron water mains, with hydrants, valves and fittings; fifteen four-inch fire plugs with ten four-inch gate valves; 7000 pounds specials (cast-iron fittings), and twenty two-and-one-half-inch auxiliary gate valves for fire-hose use; according to plans and specifications on file in the office of the Clerk of said town.

Said Board will reserve the right to reject any and all bids.

This the 20th day of April, A. D. 1915.

JEFF CLARK,
Clerk.

Sewage Disposal Works

Easton, Md.

Sealed proposals will be received at the office of the Mayor and Council of the Town of Easton, Md., at 12 o'clock noon on the 25th day of May, 1915, at which time and place the bids will be publicly opened and read.

The work to be done consists of supplying all labor and materials necessary to construct two Sludge Beds, seven Sand Filter Beds, and two Motor-driven Sludge and Sewage Pumps, with necessary piping, valves, etc., at the Town Sewage Disposal Works, and the extension of the South Outfall Sewer.

Contract, specifications and blank proposal forms may be had of the Town Engineer, Easton, Md. Plans may be obtained on the payment of \$2 for each set.

Each proposal submitted must be accompanied by a certified check, drawn to the order of the Mayor and Council of Easton, in the sum of two hundred (\$200) dollars.

The right is reserved to reject any or all bids.

JAMES B. CLARK,
Town Clerk.KASTENHUBER & ANDERSON,
Acting Town Engineers.

Water-Works Improvements

Plant City, Fla.

Sealed proposals will be received by the Board of Public Works of Plant City, Florida, at the office of the Clerk, until the fifth day of June, 1915, for furnishing all material and machinery for water-works improvements, at which time they will be opened and read publicly.

The approximate quantities are as follows:

Station Equipment, Plan No. 1.

1 1,500-gallon Compound Condensing Pumping Engine.

1 300 cubic feet Compound Condensing Two-Stage Air Compressor.

1 100 H. P. Boiler, steel casing.

1 200 H. P. Open Heater.

1 Feed Pump.

1 Air Lift.

Station Equipment, Plan No. 2.

2 50 H. P. Oil Engines, direct connected to 2 500 G. P. M. Triplex Pumps.

1 50 H. P. Oil Engine, belt connected to 1 300 cu. ft. Two-Stage Air Compressor.

1 10,000-gallon Steel Oil Storage Tank.

Station Equipment, Plan No. 3.

1 100 H. P. Oil Engine, direct connected to 1 1000 G. P. M. Triplex Pump.

1 10,000-gallon Steel Oil Storage Tank.

Each bid must be accompanied by a certified check for five per cent. of amount bid, drawn to the order of J. L. Young, Chairman.

Specifications may be obtained from E. W. Mays, Superintendent Water-works, Plant City, Fla.

The right is reserved to reject any or all bids.

J. L. YOUNG,
Chairman Board of Public Works.

Sewer

Durham, N. C., May 1, 1915.

Sealed proposals will be received until 8 P. M. May 17, 1915, by City of Durham for sewer outfall.

The work will consist of approximately 1900 feet 8-inch sewer, 6000 feet 12-inch sewer. Plans and specifications on file at City Engineer's office.

The right is reserved to reject any and all bids. Certified check for \$100 required with proposal.

(Signed) W. G. BRADSHAW,
Chm. St. Comm.
GEO. W. WOODWARD,
City Clerk.

Water-Works

Boswell, Okla.

The Town of Boswell, Oklahoma, will receive sealed bids up to 2 o'clock May 14 for water-works materials to install plant complete; 100 H. P. oil engine to be used. Will pay cash. Specifications \$2. Jas. T. George, Engr. R. L. Lowdermilk, Chairman of the Board of Trustees.

Excavating and Filling

Miami, Fla.

Sealed bids will be received for the excavation of 10,000 yards of rock for wall 2500 feet long, and 315,000 yards of brick and sand fill. For full particulars address J. H. Tatum, Miami, Fla.

Subway

Miami, Fla.

Wanted—Estimates on a subway 30 feet wide, 40 feet extreme depth, 15 feet from base of tunnel to top of arch, 1200 feet in length. For full particulars address J. H. Tatum, Miami, Florida.

Drainage Ditches

Bartow, Florida.

Bids will be received for the construction of 142 miles of Drainage Ditches in the Peace Creek Drainage District, Polk county, Florida, contemplating the excavation of approximately 2,432,743 cubic yards, work to be let in six units, on Tuesday afternoon, June 1, 1915, at 1:30 P. M., at the office of the said Peace Creek Drainage District, 77 Main street, Bartow, Florida. All bids to be sealed and a certified check for at least 5% of the amount of the bid must accompany it as evidence of good faith.

Specifications and map will be mailed upon application to Benj. Getzoff, Asst. Secy. Peace Creek Drainage District, 77 Main street, Bartow, Florida, when accompanied by \$10 to insure the return of the specifications and map in good condition.

The right to reject any or all bids is hereby reserved.

R. C. HATTON,
E. L. MACK,
LYCURGUS BURNS,
Board of Supervisors,
Peace Creek Drainage District,
C. G. ELLIOTT, Chief Engineer,
McLachlen Building,
Washington, D. C.

Letters from Contractors

Hundreds of letters from Contractors in all parts of the South, who are on our subscription list, prove that the Manufacturers Record is read eagerly to help them get new jobs, and its advertising pages are consulted when they select the machinery and equipment they will need in carrying on their work.

Do you want to reach Contractors?

Your advertisement in the Manufacturers Record will put you in direct touch with the active Contractors of the South and keep them posted on the materials, equipment or supplies you handle.

Manufacturers Record - Baltimore, Md.

INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers whether they are advertisers or subscribers or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

Stacy & Walters.

A partnership, known as Stacy & Walters, has been formed for the development of sales in South Georgia and Florida territory. The firm will represent manufacturers of bank, store and office fixtures, merchants' equipment, etc. It is located at Savannah, Ga.

Merrill G. Baker Appointed.

Merrill G. Baker, identified with the iron and steel trade for the past eleven years, has been appointed assistant general manager of sales for the American Vanadium Co., Pittsburgh, Pa. He recently resigned as assistant to general manager of sales of the Cambria Steel Co., Philadelphia, to accept this new position.

Chester & Fleming, Engineers.

The Xenia (O.) Water Co. has engaged Chester & Fleming, engineers, Pittsburgh, to prepare plans and specifications for well connections, temporary pumping station and 16-inch force main. The firm is also preparing a report and estimates for extensive improvements to the water and the electric-light systems and changes in the sewerage pumping equipment at Batavia, N. Y.

Bucyrus Company's Southern Office.

The Bucyrus Company, South Milwaukee, Wis., manufacturer of steam shovels, dredges and excavating machinery, has removed its Southern sales office from Birmingham to 1105 Heanen Bldg., New Orleans. E. L. Byron will be in charge, assisted by R. S. Byron. Territory embraced by the New Orleans office includes Georgia, Florida, Alabama, Mississippi, Tennessee, Louisiana, Arkansas and Texas.

Ginning Around the Globe.

The machinery made by the Continental Gin Co. of Birmingham is in use not only in the South and in the lower part of California, but in Hayti, San Domingo, Brazil, Peru, Greece, Asiatic Turkey, Persia, Russia, India, the Philippines, Australia, China, Hawaii, Mexico, and the African colonies of France, Germany, Portugal and England—in fact, in practically every country where cotton is grown.

Chemical Construction Co.

Among the leading enterprises of Charlotte, N. C., is the Chemical Construction Co., of which T. C. Oliver is manager. The company furnishes material for erecting acid-proof units of acid-proof masonry, replacing the old method of using lead casings and linings. It generally recommends that it be allowed to take charge of the construction on a basis of cost plus a percentage, but also takes contract on guaranteed work when required.

Cresson-Morris Announcement.

The Cresson-Morris Company, Philadelphia, announces that in connection with the Ingersoll-Rand Company, New York, it is prepared to offer high-grade steam-condensing apparatus for all conditions of service. Included in this apparatus will be the Ingersoll-Rogier vacuum pump and the Beyer counter-current condenser. Condenser catalogue No. 1001, containing timely information on the subject of condensation of steam, is ready for distribution.

New Orleans Land Sale.

Investors in and developers of municipal lands are invited to investigate the proposed sale of the Michoud or Chef Menteur property at New Orleans. About 34,000 acres are involved, and the land is within the city limits between two trunk lines of railway, the center of it being within 12 miles of the center of New Orleans. This is a reclamation proposition. The sale will be held publicly on May 19. Information can be obtained from W. Morgan Gurley, commissioner, 840 Common St., New Orleans.

Comstock Electric Co.

Active in electrical installations in various classes of buildings is the Comstock Electric Co., High Point, N. C. This com-

pany accepts general contracts for electrical work in residences, stores, factories, power plants, cotton mills, etc., confining its activities to North Carolina as far as possible. It does not refuse to estimate on installations in other States. Its recent contracts included nine residences at High Point, six residences at Thomasville, N. C., and the Lee Theater at Thomasville.

Ewald Iron Co.

The Fidelity & Columbia Trust Co., Louisville, Ky., will offer for sale at public auction on June 2 255 shares of the capital stock of the Ewald Iron Co., Louisville. This is in accordance with the will of L. P. Ewald, and the total capitalization of the company is 3000 shares, 45 shares remaining in the treasury. In accordance with a contract between the company and A. J. Sills. Prospective purchasers have the right to inspect the Ewald plant and a statement showing operations for five year past.

John W. Sibley Elected Secretary.

At a recent meeting of the Southern Paving Brick Manufacturers' Association John W. Sibley was elected secretary and treasurer. The association aims to thoroughly inform the public as to the merits of vitrified brick for paving and to co-operate with city, county and state officials in order that they may obtain the best workmanlike and scientific form of construction and highest quality of material. The association will have nothing to do with selling brick, but will be devoted solely to the educational and co-operative lines indicated, and for creating a better appreciation of the value of brick for paving in the South. Mr. Sibley has a wide knowledge of brick, and has for 22 years been treasurer of the National Brick Manufacturers' Association. He has also been deeply interested in the advancement of Birmingham, his home city, and was formerly president of the Birmingham Chamber of Commerce. His office will be located at 729 Brown-Marx Bldg., Birmingham.

Empire Machinery & Supply Co.

Machinery and supplies manufactured by leading companies are offered by the Empire Machinery & Supply Co., Norfolk. This company has been organized with \$50,000 capital by J. G. McNeal, president of Garysburg Manufacturing Co., Burgaw, N. C.; H. B. Phillips, general manager of Beaufort County Lumber Co., Fairmont, N. C., and with Jackson Bros. Lumber Co., Whaleyville, Va.; Nathan O'Berry, president of Whiteville Lumber Co., Whiteville, N. C., and of Enterprise Lumber Co., Mt. Olive, N. C.; G. W. Truitt of Dill-Cramer-Truitt Corp., Suffolk, Va., and of G. W. Truitt & Co., Capron, Va.; G. W. Truitt, Jr., of G. W. Truitt & Co.; O. G. Calhoun of Beaufort County Lumber Co. Among the manufacturers represented by the Empire company are New York Belting & Packing Co., Dodge Sales & Engineering Co., Detroit Oak Belting Co., Link-Belt Co., John A. Roebeling's Sons Co., Henry Disston & Sons, Simmonds Manufacturing Co., R. & J. Dick, United States Graphite Co., etc.

Boilermakers' Convention.

A meeting is to be held June 21, 22, 23 at Erie, Pa., to organize an association for the advancement of the boiler business generally and to promote and introduce the code of uniform standard boiler specifications recently adopted by the boilermakers' convention. Charles E. Durban, Erie, Pa., chairman of the committee on uniform standard specifications, commenting on the importance of the meeting, writes: "We believe this meeting will unite the boilermakers more thoroughly than they ever have been before, and that the organization which has been so long in existence will take on new life and the members become better acquainted, and that this movement of the standard specifications is only one of the many that will grow out of it, for the betterment and dignity of the boiler-making industry at large." Minutes of the joint meeting of the American Boiler Manufacturers' Association and the National Tubular

Boilermakers' Association, held in Pittsburgh last March, have been printed and are now ready for distribution.

TRADE LITERATURE

Collapsible Steel Containers.

An illustrated leaflet is being distributed to describe the U. S. Collapsible steel container manufactured by the United States Collapsible Steel Container Co. of New York. The container mentioned is rigid and staunch, inelastic and yet resilient, very reliable under severe handling, and can be used repeatedly for years.

Kerr Steam Turbines.

Kerr Turbine Co., Wellsville, N. Y., is distributing Bulletin No. 53, entitled "Economy Exhaust Steam Turbines," which describes and illustrates typical installations and explains the conditions under which exhaust turbines can be made to produce large increase in power output practically without other expense than the cost of the turbine installation.

Chalmers & Williams Crushing Equipments.

Descriptive and illustrative of modern crushing equipments are the publications of Chalmers & Williams, Chicago Heights, Ill. This corporation manufactures modern crushing machinery for gold, silver, copper, lead, zinc, etc., and its designs are in use throughout the world. Its specialties include the Symons disc crushers, bronze ball gyratory crushers, Blake crushers, Burt revolving filters, etc.

Gripwell Pulley Covering.

Users of belts for power transmission will find data of interest to them in the folder issued by the Gripwell Pulley Covering Co., Hollis, N. Y., sales office at 601 Candler Bldg., New York. The folder illustrates and describes the company's device for preventing the slipping of belts and thereby enabling belt users to obtain the highest efficiency in power transmission.

McFeely Milling Machinery.

Millers of flour and other grains are invited to investigate the McFeely milling machinery manufactured by the Thomas McFeely Company, 232 Bourse Bldg., Philadelphia. This company's latest publication presents illustrations and descriptions of roller mills, dustless purifiers, oscillators, grain and cereal blenders, granulating millings mills, granulating bran finishes, etc., together with a complete description and outline of the McFeely granulating milling system.

Retail Coal Pockets.

Modern coal-handling methods provide ways and means for the economical and efficient care of the world's fuel. In designing and constructing retail coal pockets the Guarantee Construction Co. has been active and successful. The company is now distributing the third edition of its illustrated catalogue describing retail coal pockets it has built. It offers suggestions that should prove of value to progressive coal dealers and others who are required to handle quantities of coal. For copies of catalogue ad-



Neighborizing the Farmer

One of the most significant facts of our telephone progress is that one-fourth of the 9,000,000 telephones in the Bell System are rural.

In the days when the telephone was merely a "city convenience," the farms of the country were so many separated units, far removed from the centers of population, and isolated by distance and lack of facilities for communication.

But, as the telephone reached out beyond cities and towns, it completely transformed farm life. It created new rural neighborhoods here, there and everywhere.

Stretching to the farthest corners of the states, it brought the remotest villages and isolated places into direct contact with the larger communities.

Today, the American farmer enjoys the same facilities for instant,

direct communication as the city dweller. Though distances between farms are reckoned in miles as the crow flies, the telephone brings every one as close as next door. Though it be half a day's journey to the village, the farmer is but a telephone call away.

Aside from its neighborhood value, the telephone keeps the farmer in touch with the city and abreast of the times.

The Bell System has always recognized rural telephone development as an essential factor of Universal Service. It has co-operated with the farmer to achieve this aim.

The result is that the Bell System reaches more places than there are post offices and includes as many rural telephones as there are telephones of all kinds in Great Britain, France and Germany combined.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES



One Policy

One System

Universal Service

dress the company at 140 Cedar St., New York, or 188 S. LaSalle St., Chicago.

National Metal Bulletin.

National outlet boxes and covers, gang switch boxes and covers, lock nuts and bushings and stamped steel fixture studs are described in the National Metal Molding Co.'s Bulletin No. 250. This publication presents complete descriptions, accompanied by line drawings and photographic views, of the company's various specialties, which are designed by and manufactured under the direct supervision of leading experts. These products embody improvements suggested by years of experience. For catalog address the company at Pittsburgh.

Safety First for Schools.

An illustrated booklet entitled "Safety First for Schools" will interest those who are concerned with the protection of children in educational and similar institutions. It is designed primarily to awaken an interest in the fire-safe aspect of school buildings in the minds of boards of education and school superintendents. Data and illustrations are presented, with a special reference to the Dahlstrom products. These products are the hollow metal doors, windows and interior trim, metal moldings and pressed shapes, etc., of the Dahlstrom Metallic Door Co., Jamestown, N. Y.

Chicago Pneumatic Compressors.

Bulletin No. 34-M of the Chicago Pneumatic Tool Co. describes and illustrates Class 9 Chicago pneumatic steam and power-driven compressors, these machines representing the latest design in duplex high-speed enclosed frame self-oiling machines for general use. These equipments have been developed through 15 years' experience in manufacturing air compressors, and they embrace important features which have been demonstrated to be of permanent value. For copies of bulletin address the company in the Fisher Bldg., Chicago, or at 50 Church St., New York.

Degraco-Tone Wall Finish.

People connected with the building industry and therefore interested in a flat wall finish for interiors are invited to address the Detroit (Mich.) Graphite Co. to request

a copy of the booklet telling about Degraco-Tone. This material is offered as sanitary; permanent color; will not chip, crack or peel; when washed with ivory or castle soap and water, the original appearance may be restored without injury, etc. The material is an oil paint in flat finish, and is claimed to meet the most exacting requirements in dwellings, office structures, hotels, churches, hospitals, etc.

Cars and Track.

Users of industrial railway equipment are invited to address the Gregg Company at 80 Wall St., New York, and ask for a copy of the Gregg booklet, briefly illustrating and describing cars and track. The company has its works at Hackensack, where it has a large stock of standard materials for immediate shipment, special material being built according to specifications. It surveys, builds and installs complete industrial railway conveying systems when requirements demand this. Portable track, portable switches, turntables, trucks, wheels and axles, all steel side dump cars, flat cars, rack cars, etc., are listed in the company's booklet of material for mines, brick works, sand banks, quarries, etc.

Electric Arc Welding Apparatus.

Managers of foundries and large repair shops where there is sufficient welding to warrant the installation of any apparatus for this purpose will be interested in Bulletin 48904 and 48905, just issued by the General Electric Co., Schenectady, N. Y., and devoted to the subject of electric arc welding and arc welding apparatus. Bulletin 48905 illustrates and describes both the stationary and portable electric arc welding apparatus as manufactured by the company. Bulletin No. 48904 takes up the general subject of electric arc welding and describes the three processes by means of which welding may be done. It also refers to the welding equipments, materials, notes the advantages to be derived from this process, and mentions special applications of electric welding.

Type "E" Stoker.

Greater efficiency, higher capacity and complete elimination of smoke are claimed for the improved Type "E" underfeed stoker manufactured by the Combustion En-

gineering Corporation, 11 Broadway, New York, which is illustrated and described in Bulletin B-2, recently issued by the company. Full description of the Type "E" stoker, with illustrations of longitudinal and cross sectional views, are given in the bulletin. The company manufactures other types of stokers for specific purposes, among which are stokers for heating, forging, annealing, spring and axle, bolt and nut, and melting furnaces, glass lehrs, kilns, dryers and evaporators; also, underfeed stokers for internally-fired boilers, either of stationary or marine type, and traveling grate stokers.

Concrete Highway Construction.

Extensive treatment of the subject "How to Build a Concrete Road" is given in what is described as a textbook for highway engineers, officials and builders, recently issued by the Atlas Portland Cement Co., 30 Broad St., New York. Illustrations of various stages of road construction work, sectional drawings and detailed description of the preparation of the sub-base, transportation of materials, water supply, proportioning, mixing, placing, finishing, reinforcing, joints, curing, shoulders, and the maintenance of concrete roads are given in the book. Several pages are devoted to the subject dealing with itemized proposals for concrete-road construction and how to fill them out intelligently. The road department of the Atlas Portland Cement Co. extends an invitation to submit problems having to do with the construction of concrete roads, and states information and details regarding such work, as well as interesting facts pertaining to roads already built and in use, will be sent upon request.

Rolling Doors and Shutters.

Vertical rolling doors, shutters and partitions of iron, bronze, steel and wood, manufactured by the J. G. Wilson Corporation of

Norfolk, Va., with New York offices, 3 West 29th St., for dividing rooms, church and school hygienic wardrobes, Venetian awnings, blinds, etc., are illustrated and described in special catalogues and pamphlets issued by the company for the use of engineers and architects to assist them in making suitable preparation for the installation of rolling doors and shutters in different types of buildings. Detailed sheets contained in catalogue No. 34½ are said to be of considerable assistance to the draughtsman in the preparation of his drawings. Also a few pages of the catalogue are devoted to photographs of the company's rolling doors and shutters installed many years ago, which illustrates the lasting qualities of these products. Interlocking slat steel rolling doors and shutters, self-collaring rolling steel fire doors, Wilson's patented "Salamander-Rolling" fire shutters, and special swing sliding doors of several different styles, of which the J. G. Wilson Corporation owns and controls the patents, are among the company's products illustrated and described in the catalogues.

GENERATOR

CHEAP

1-General Electric Turbine, direct current, 35 K.W., 250 volts, with switch-board panel 20" wide, double pole switch and circuit breaker, ammeter and potential plug receptacle, complete. Condition good as new.

Good reason for selling.

ELITE LAUNDRY CO.

Eutaw and Biddle Sts.

Baltimore, Md.

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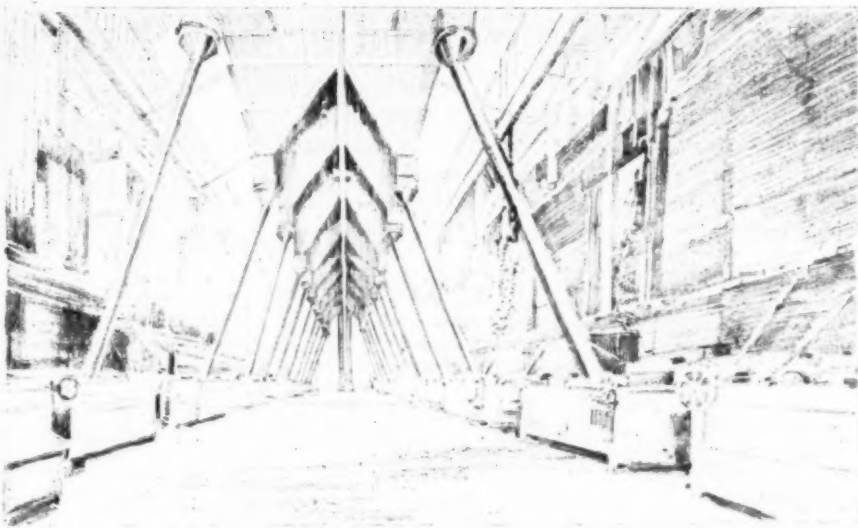
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2nd Vice-President

T. J. PRATT
Secretary

Empire Machinery & Supply Corporation

36 Commercial Place, NORFOLK, VA.

Agents for N. Y. Belting & Packing Co., Detroit Oak Belting Co., Dodge Sales & Eng. Co., Link-Belt Co., Nyanza Roofing, Jno. A. Roebling's Sons Co., Henry Dorton & Sons, Simonds Mfg. Co., R. & J. Dick, Ltd., U. S. Graphite Co.'s Products.



Secure Genuine Fuel Economy

by saving on the coal you buy and by increasing the power you deliver. Our Chemists and Engineers can help to buy the coal best adapted to your particular conditions, and to fire this coal most economically.

Our Department of Fuel Engineering

stands ready to advise on the selection of coal, to determine what kind will give you the greatest thermal efficiency per dollar spent. Its specialists will determine correct size, means of handling, method of firing, etc., and perform all necessary analyses and tests to insure uniformity.

An Instance in Point

A certain power station was bothered with slag on the grate bars, causing a tremendous maintenance cost. The coal was a well-known grade. We located the trouble by ascertaining the fusing temperature of the ash and by observing the firing conditions. The ash of this particular coal was found to fuse at 2300 deg. F., while the furnace temperature over the grate was close to 3000 deg. F., due to abnormally high draft, so that instead of going through the grate bars most of the ash was fused into slag. Compliance with our recommendations relieved this condition and led to the desired efficiency without further cost.

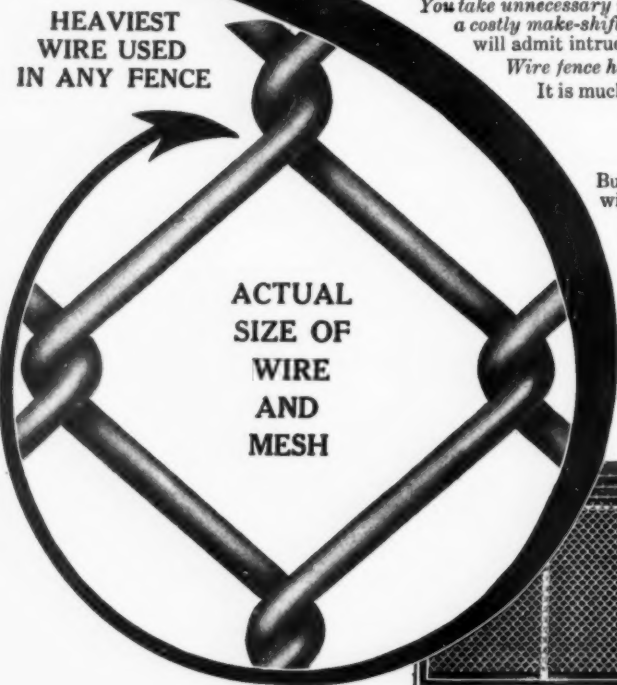
We do not pretend that we have encountered and solved every possible problem that may arise in the selection and use of fuel, but we do feel justified in pointing out that we have the inestimable advantage of being able to apply to the study of unusual conditions the services of a corps of competent technically-trained specialists whose combined knowledge should prove of incalculable value. Whatever the nature of your problems may be, wherever you realize that some source of inefficiency exists, let our chemists and engineers focus their brains for the true economic solution.

A pamphlet "The Purchase of Coal" will be sent upon request
Prospectus of Our Service gladly supplied

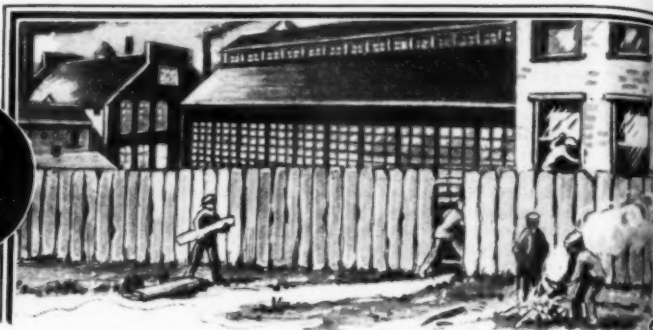
Arthur D. Little, Inc., Chemists, Engineers, Managers, Boston, Mass.

100% Security in CYCLONE-WAUKEGAN Property Protection Factory Fence

HEAVIEST
WIRE USED
IN ANY FENCE



ACTUAL
SIZE OF
WIRE
AND
MESH



SAFETY FOR YOUR FACTORY PROPERTY is your object in surrounding it with a fence. You take unnecessary risks when you depend upon the board fence for protection. Experience has proven it to be merely a costly make-shift. It is not fireproof; it obstructs the view and affords protection to prowlers; a board removed will admit intruders; it is easily scaled; it harbors inflammable and decaying trash, snowdrifts and moisture. Wire fence has been adopted by the warring armies of Europe as an effective means of defence. It is much more effective in protecting your property against the dangers which threaten it.

Cyclone-Waukegan Property Protection Fence The Highest Form of Fence Construction

Built of heavy wire, thoroughly galvanized, closely and strongly woven. Stands 6 to 8 feet high with 3 or 5 heavy barb-wire strands at top, which make it impossible for anyone to climb over it.

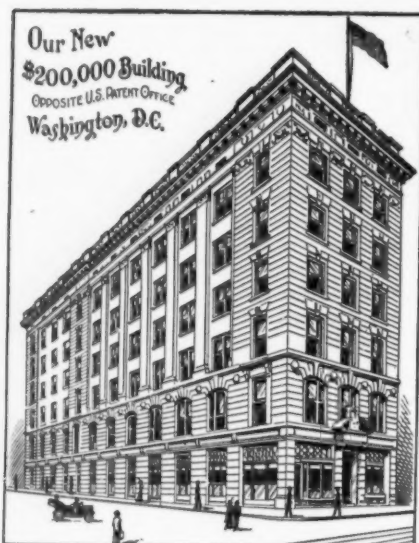
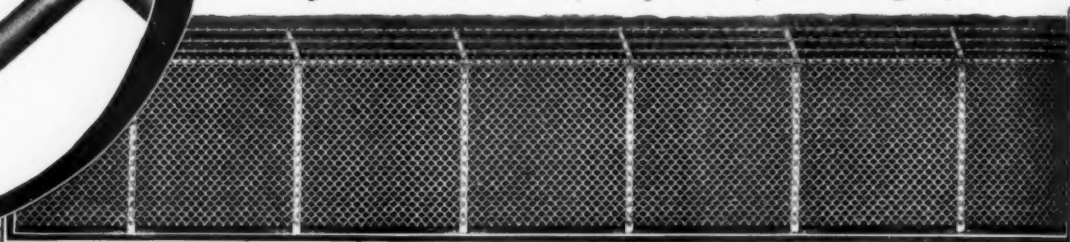
Cyclone Property Protection fences are in use around scores of factories. We are the largest property protection fence manufacturers in America, and have spent years in perfecting our designs and methods of construction. We know the needs of the buyer, and are able to supply them to his entire satisfaction at a money-saving price. We guarantee every shipment.

Our engineer is at your service to solve your fencing problems permanently and economically. We will advise you regarding your needs without charge.

We build gates to fit any openings for driveways, alleys, switch tracks, etc. Cyclone property protection fence built to fit your grounds.

Let us send you Illustrated catalog giving full information, also views showing factories protected by our fence.

Cyclone Fence Co., Dept. 132, Waukegan, Ill.



Our New
\$200,000 Building
OPPOSITE U.S. PATENT OFFICE
Washington, D.C.

PATENTS Secured or Fee Returned

Send model or sketch for free report as to patentability. Our four books sent free to any address:

How To Obtain Patent, with one hundred mechanical movements. **What To Invent**, with valuable **List of Inventions Wanted**. **One Million Dollars Offered for Inventions**. **List of Patent Buyers and Fortunes in Patents**. Patents secured by us advertised **FREE**

WANTED NEW IDEAS

Send for LIST OF PATENT BUYERS who consult us when purchasing patents. Contains requests from MANUFACTURERS, MAIL-ORDER HOUSES and PROMOTERS for patents secured by us, and suggestions as to New Ideas they wish to purchase. We invite manufacturers and promoters to address our Sales Department regarding the purchase or leasing of a number of meritorious patents secured by us.

VICTOR J. EVANS & CO.

749 Ninth Street, WASHINGTON, D. C.

We have recently secured the following patents. A copy of any of these patents will be forwarded upon receipt of ten cents. Address all communications to Sales Dept., Victor J. Evans & Co., Washington, D. C.

E. P. Turner, corn cutter.
M. R. Lackey, bearing scraper.
James Lamb, hose billing press.
Messrs. Moline & Asor, fruit and vegetable juice expresser.
Joseph A. Murena, cushion device for shoes.
J. S. Swenson, lightning rod.
Manford E. Sterrett, bottle.
Dr. J. L. Cooper, rail joint.
Fenton Yearicks, drinking cup dispenser.
Hans Krogh, tractor wheel.
C. C. Hole, wrench.
William H. Blanchard, form for neck scarf.
Mrs. Kate B. Tudor, bundle wrapper.
Messrs. Todd & Bradley, hinge.
Irving M. Graham, poultry feeding device.
Edward Rooney, educational device.
A. A. Evans, cotton drying apparatus.
R. H. MacDonald, gasoline vaporizer.
Messrs. Schmidtborn & Bubitz, speed adjuster for motion-picture machine.
S. F. Sosebee, stalk cutter.
L. L. Pittman, cutting mechanism for harvester.
T. J. McDams, burner.
G. E. Judd, engine.
M. G. Crooks, liquid level register and alarm.
Wade R. Beddingfield, railway switch.
J. R. Leeming, nut lock.
C. McKibben, bascule bridge.
Walter A. Poulmot, hammock support.
James E. Sykes, smoke consumer.
Rexford M. Smith, flying machine.
W. H. Hope, oil burner.

Delbert E. Robinson, electric switch.
Francis H. Miller, automatic train stop.
Christian Somershoe, rail ties.
John Lehmann, brooder.
John Kellenberger, shipping crate.
S. J. Crafts, automatic stop for phonograph record.
A. B. Drygas, envelope.
Charles N. Winter, adjustable hanger.
Louis Warden, cue chalk.
Joseph N. Suprunowski, car attachment.
August S. Christensen, driving gear for mechanically propelled vehicles.
Thomas C. Evans, safety stirrup.
William W. Chenard, combination lock.
Messrs. Desselle & Philippart, stool.
Charles J. Harber, bridle bit.
E. Fraedrich, coupling for traction engine.
J. B. Berstler, friction transmission gear.
O. H. Beauregard, folding box.
Samuel G. Barr, windmill.
J. A. Burke, sanitary meat case.
Milton S. Lysinger, dynamo.
Charles Highers, collapsible poultry crate.
G. A. Hiesz, corn blinder attachment.
J. G. Friberg, horse collar.
Walter S. Hendren, toy.
E. H. Davis, car door.
Victor Nyland, closure for receptacle.
J. C. Davis, intermittent ratchet mechanism.
John Lobenat, projectile.
James J. Lindsey, tail light for automobile.
Messrs. Chanley & Gordon, automobile light signal.

Theo. E. Buechner, non-refillable bottle.
R. J. Messier, measuring instrument.
G. L. Huyett, ripping device.
George F. Reber, vehicle wheel.
William R. Parkinson, lifeboat.
T. B. Minturn, wind shield.
C. B. Hutchins, corn loom.
George E. Hoyt, journal-box brasses.
Leroy Merrow, dumping device.
Daniel Masor, expansion bolt.
C. Caillouette, device for connecting blades to snathes.
Esther S. Browning, telephone exchange system.
Messrs. Von Eschen & Von Eschen, policemen's billies.
Michael Wagon, combined curtain ring and clamp.
Lewis S. Wixon, scaffold bracket.
L. E. Stucker, tube-forming machine.
T. A. Spradley, door lock.
Luther W. Springstein, mail catcher.
J. B. Staadecker, suit hanger.
Burley W. Corley, brush.
Martin Glinther, piano protector.
Edward L. Flechearty, plow.
George W. Neal, peach slicer and seeder.
John Jerzyk, stirrup.
A. J. Chanut, operating device for whip.
James Marlborough, fountain pen.
M. J. Mustonen, flying machine.
M. B. Hubbard, mail box.
D. L. Kane, rule.
Oscar C. Ivers, collapsible and demountable tire rim.

A. Klimes, trolley protecting system.
Charles I. K. Lamb, talking machine attachment.
Messrs. Pierson & Lynch, locking mechanism for revolving gate.
Albert L. Gainer, train-stopping apparatus.
William M. Byrnes, telephone apparatus.
Claud Henry, telegraph apparatus.
Ralph Marino, music-leaf turner.
W. O. Bashor, gem setting.
Mainardi Bros., train-stopping systems.
Elmer Johnson, steering attachment for traction engine.
W. W. Hout, welding flux.
Miss Florence A. Hornor, box.
R. L. Hickman, stove-lid lifter.
Bruce Hodgman, hay stacker.
Theodore D. Lance, miners' candlestick.
James A. Poplin, shoes for burr mills.
C. O. Plummer, harrow cart.
Carl J. Rethorn, lawn and garden rake.
G. W. Murphy, wire fence tool.
George T. Parr, bottle closure.
J. L. Kunkle, cow-tail holder.
Albert P. Schnell, granaries.
O. R. Schockley, saw set.
Albert Shurt, double bass guitar.
C. W. McClure, garment.
A. J. Schermerhorn, air-valve connector.
J. F. Zimmerman, metallic tie.
Charles Wainwright, air compressor.
Joseph H. Courtney, wire stripper.
C. C. Ferry, tire.
Mrs. A. White, crochet needles.

Special Advertisements of General Interest.

Factory Building For Sale

Factory, 5 stories, basement and attic—68½x285, and outside elevators, stairways and fireroom; 2 90 H. P. boilers, 80 H. P. engine; fronts on three streets and navigable river; dock on premises; short haul to Penn. R. R. freight depot; building has ample light; is very strongly constructed; trussed slate roof; no posts on fifth floor. The greatest bargain in central New Jersey.

Address Box 33, NEW BRUNSWICK, N. J.

Your chance to open up a new market for your goods in SOUTH AMERICA

If interested, write at once to

FRIEDR. W. LUTZ

RICHMOND, VA.

Personal Representatives in Brazil and the Argentine Republic.

Great Land Sale in Louisiana

United States District Court, Eastern District of Louisiana, New Orleans Division, No. 14,852, Continental and Commercial Trust and Savings Bank Versus New Orleans Drainage Company. In Equity.

Notice is hereby given, pursuant to a decree of foreclosure in the above entitled suit, dated July 9, 1914, and in conformity with a supplemental decree of said report rendered and signed on the 11th day of January, 1915, ordering the undersigned Special Master Commissioner to adjourn said sale from the time first appointed until the 19th day of May, 1915, at the hour of 12 o'clock noon, before the principal front door on Royal street of the Courthouse of the Parish of Orleans, City of New Orleans, La. And in conformity with said supplemental decree, notice is hereby given that I, the undersigned Special Master Commissioner, will proceed to sell at public outcry at the principal front door on Royal street of the said Courthouse in the Parish of Orleans, City of New Orleans, La., at the hour of 12 o'clock noon, on May 19th, 1915, without valuation, appraisal, extension or stay of execution, to the highest bidder for cash the land particularly described in said original decree of foreclosure of said Honorable Court, dated July 9, 1914, and said tract of land being known as the Michoud or Chef Menteur property, comprising some thirty-four thousand (34,000) acres

within the limits of the City of New Orleans. This land lies between two trunk lines of railway, and the center of it is within twelve (12) miles of the business center of New Orleans. It is a reclamation proposition, and offers rare and magnificent opportunity for reclamation and sub-division, and adjoins similar lands now being used in growing truck and oranges and selling approximately from four to six hundred dollars an acre, and when reclaimed can be readily sub-divided into small farms. Terms of Sale—Cash upon confirmation of the sale by said Honorable Court. A deposit of ten per cent. (10%) of the bid will be required at the moment of adjudication. Taxes of 1914 will be paid from the proceeds. Reference is made to said decree of foreclosure for more particular description of said property and for statement of the terms and conditions of said sale. The undersigned will be pleased to furnish full information to all inquirers.

W. MORGAN GURLEY,
SPECIAL MASTER COMMISSIONER,
NO. 840 COMMON STREET,
New Orleans, La.

SALES AGENCY

in New England territory would like to represent reliable concern in iron or machinery line, straight commission basis. Prompt attention to all inquiries. Have storage facilities—salesmen on road—equipped with business autos. Write for information. Address VULCAN CO. Allston Sta., Boston

BRICK PLANT FOR SALE OR LEASE

One of the best located and equipped operating Brick Plants in the Southwest. Manufacturers of vitrified face and paving brick. Matt face a specialty. Located at Ft. Smith, Ark. Trade covers part of four States. Terms can be made to suit a responsible purchaser. Capacity, 75,000 brick per day. Address BURKE BRICK COMPANY, Ft. Smith, Ark

If you wish to keep posted on the progress of the South read the
MANUFACTURERS RECORD
Price \$4.00 a year, or six months for \$2.00

Merchants Looking for Better Location

with all conditions in their favor, should write me about new EARLE BUILDING, Birmingham, Ala.—five stories and basement, strictly modern, full fireproof construction, in heart of city, and one hundred feet from best improved corner in the South.

R. A. TERRELL
503 Title Guarantee Bldg. Birmingham, Ala.

WOODWORKING PLANT FOR SALE

Complete woodworking plant with all modern machinery and glueing equipment in first-class condition, ready to run, including five drykilns, two-story frame buildings, steam power, electric lights, railroad siding.

Plot of ground 1½ acres.

This mill, situated at Ashland, Ky., has been making dimension stock of all different kinds, and can easily be converted into a Moulding and Flooring Mill.

Abundance of oak and other hardwoods in the vicinity to operate a plant for many years.

A large stock of seasoned lumber in yards.

Railroad and water facilities.

Parties interested, address Woodworking Plant, care Manufacturers Record, Baltimore, Md.

THE WEST POINT ROUTE

Atlanta & West Point Railroad THE WESTERN RAILWAY OF ALABAMA

Offers excellent locations for

Truck, Fruit, Stock and General Farming

Available Factory Sites. Abundance of Raw Material and Good Transportation Facilities. Write for information.

E. S. CENTER, General Agent, ATLANTA, GA.



Newly Equipped Plant in Large Ohio City For Sale or Lease



There are two large buildings of concrete, brick and corrugated iron construction, having a total floor space of 30,000 square feet. Also, several other smaller buildings, including a foundry, and about six acres of land.

The plant is equipped with machinery for the construction of gas and oil engines, and would be adapted for an allied industry.

Located on rails of line affording good outlet to markets.

For details write to

F. H. LA BAUME, Agricultural and Industrial Agent,
Norfolk & Western Railway Co.,
Roanoke, Virginia.

REFERRING TO FILE M-4707.

Public Sale of EWALD IRON COMPANY

The Fidelity and Columbia Trust Company, Executor and Trustee under the will of L. F. Ewald, will, on Wednesday, June 2, 1915, at eleven o'clock A. M., at the Exchange Hall of the Board of Trade in Louisville, Kentucky, sell at public auction to the highest bidder 265 shares of the capital stock of the Ewald Iron Company of Louisville, Kentucky, a corporation organized under the laws of Kentucky.

The total capitalization of the Company consists of 3000 shares of common stock, of which there has been issued 265 shares, each share being of the par value of \$100. Forty-five shares remain in the treasury of the Company to be issued in accordance with the terms of a contract between the Ewald Iron Company and A. J. Sills.

The sale has been authorized by the Jefferson Circuit Court, Chancery Branch, Second Division.

No bid of less than \$24.17 per share will be entertained, and the Executor and Trustee reserves the right to withhold from sale 770 shares if, after the final acceptance of a bid, it elects so to do. Each bidder will be required to deposit with the Executor and Trustee, in advance of the bidding, a check for \$60,000, certified by some bank or trust company doing business in Louisville, Kentucky, as an evidence of good faith, and in order to assure compliance by the successful bidder with the terms of sale. Checks deposited by unsuccessful bidders will be returned to them, and the check deposited by the successful bidder will be credited on the purchase price when the terms of sale are fully complied with. In case the successful bidder fails or refuses within ten days to comply with the terms of sale, said check so deposited by him will be forfeited to the Executor and Trustee for the use and benefit of the estate of L. F. Ewald as liquidated damages and not as penalty.

The terms of sale will be one-third cash and the balance in three equal installments due on or before six, twelve and eighteen months, respectively. For the deferred payments the purchaser will execute to the Executor and Trustee his three promissory notes, of equal amount, due on or before six, twelve and eighteen months from their date, respectively, and bearing six per cent. interest from their date. To secure the payment of said notes, and each of them, a lien will be retained on all the shares of stock sold, and said shares must be deposited with the Executor and Trustee, to be held by it until said indebtedness is fully paid. The notes executed by the purchaser shall be the usual form of collateral note now used by the Fidelity & Columbia Trust Company, and each note shall contain a provision that on failure to pay any note or interest for thirty days after same becomes due, the Trustee may declare all of the unpaid notes to be due and may proceed to enforce payment thereof by a sale of the stock as provided in the notes.

There will be refunded to the Ewald Iron Company, upon compliance with the terms of sale, the sum of \$30 on each share of stock sold, being the amount of a dividend declared by the Ewald Iron Company on the 16th day of January, 1915. The purchaser shall have the right to pay the full purchase price in cash.

Prospective purchasers shall have the right to inspect a statement showing the operations of the Ewald Iron Company for the period of five years last past, said statement having been prepared by James S. Escott in February, 1915, and filed in the Jefferson Circuit Court, Chancery Branch, Second Division, in action No. 56908, styled Columbia Trust Company, Executor, etc., vs. Philip L. Ewald, etc., and certified by the Executor and Trustee to be correct. Prospective purchasers shall also have the right to inspect the plant of the Ewald Iron Company on any day from May 22, 1915, to June 1, 1915.

MEN WANTED

If you are looking for a position, read this department in our Classified Opportunities every week. Should an opening not be there that is entirely to your liking, advertise for it under "Situation Wanted."

Manufacturers Record

Bargains in Machinery and Supplies.

STEAM HAMMERS

Single Frame Steam Forging Hammers of all sizes in stock for immediate shipment. Get our prices before buying. They will interest you.

Erie Foundry Company **ERIE, PA.**

JUST FINISHED WORK MUST BE MOVED

1—Model 31 Marion revolving steam shovel, shop No. 3083, standard gauge.
6—36" Gauge 4 yd. two-way Western Dump Cars.
1—36" Gauge 6"x10" Porter saddle tank, locomotive, Steam shovel and Cars purchased new last August. I have just finished job—no further use. No reasonable offer refused.

FREDERICK BRUNNER, Wabash Bldg., Pittsburgh, Pa.

POWER and COAL MINING EQUIPMENT

IN EXCELLENT CONDITION
FOR SALE

Direct Current Generating Sets, 250 and 550 volts.
Boilers, 150 H. P., Return Tubular.
Feed Water Heaters—Cochrane, Stillwell-Bierce and McGowan.
Horizontal and Vertical Steam Engines, 5 to 320 H. P.
Air Compressors—Laidlaw-Dunn-Gordon and Norwalk, capacities 900 cu. ft. to 2100 cu. ft.
Separators, Steam Traps and Piping.
Steam Pumps, Piston and Plunger, best makes.
Mining Equipment. Full list furnished on request.

NEW RIVER COMPANY

Equipment Sales Department **MACDONALD, W. VA.**

Used Power Equipment

We are especially well fitted at the present time to take care of Power Equipment installations from 15 to 100 H. P. The following material is all in stock, ready for shipment. Send for complete list.

BOILERS

3 72"x18" H. R. T. "Penna. Boiler Works."
1 60 H. P. Economic, "Erie City Iron Works."
1 50 H. P. Locomotive, "Penna. Boiler Works."
1 30"x5" vertical "O. & S."
1 36"x8" vertical.
1 42"x7" vertical "Lebanon Boiler Works."
1 42"x7½" vertical "Erie City Iron Works."

Horizontal Slide Valve Engines

1 16"x18" "Erie City" side crank.
1 15"x16" "Nagle" center crank.
1 14"x16" "Brownell" side crank.
1 12"x16" "Chandler & Taylor" side crank.
1 10"x15" "Supplee" side crank.
1 9"x10" "Snell & Meharg" side crank.
1 8"x10" "Snell & Meharg" side crank.
1 8"x10" "Erie" center crank.

CORLISS ENGINES

1 24"x56" "Watts-Campbell" left hand, girder frame.
1 18"x42" "Watts-Campbell" left hand, girder frame.
1 18"x32" "Naylor" right hand, girder frame.
1 18"x32" "Rickard" right hand, girder frame.
1 16"x42" "Ohio" heavy duty.
1 16"x42" "Wetherill" left hand, girder frame.
1 14"x36" "Allis-Chalmers" right hand, heavy duty.

L. F. SEYFERT'S SONS, Inc.

437-441 N. Third St. **Philadelphia**

MODERN PUMPS

Offered at a great bargain

Two (2) duplex compound plunger outside end packed, pot valve type, Epping-Carpenter, piston valve, steam pumps—Size 14x22x12x24, metallic packed and complete with Ford governor.
Excellent condition and late design.

H. P. BREARLEY, 90 West St., New York

Machinery Bargains

14-ton 9"x14" Porter Locomotive, 36" gauge.
4-yd. K. & J. Dump Cars, 36" gauge.
¾-yd. All-Steel Dump Cars, 20" gauge.
200 tons 60 and 70-lb. Relaying Rails.
120 tons 12 and 16-lb. Relaying Rails.
175 tons 12" 35 and 40-lb. Sheet Piling.
50 24" 80 and 100-lb. I Beams, 30 to 39.
300 15" 42 and 60-lb. I Beams, 15 to 18.
300 12" 40-lb. I Beams, 15 to 18.
40 100x16 All-Steel Frame Buildings complete, ready to erect.

Write for Free Complete List No. XB-213.

Harris Brothers Company, Owners

CHICAGO HOUSE WRECKING CO.
35th and Iron Sts. **CHICAGO, ILL.**

D. C. UNITS—250 Volts

K.W. Make. Volts. Engine.
500 Westing. 3-Wire 21 & 42x30 McI. & Sey. I.C.
2 400 Westing. 250 18 & 36x30 4-Value Tand. Comp.
250 Westing. 3-Wire 16 & 31x27 Erie City.
200 Westing. 3-Wire 17 & 28x20 Ridgely H. T. C.
160 G. E. 3-Wire Ridgely Tand. Comp.
100 Westing. 3-Wire 12 & 20x16 Ridgely T. C.
75 Westing. 250 Simple Chase autom.
50 Cr. Wh. 250 11x12 Simple Chase autom.
35 G. E. 250 Curtis Steam Turb.

WILSON MACHINERY CO.

419 Pine St.—OTHER SIZES—St. Louis.

Motors For Sale

1 G. E. 15 H. P. 500-volt 700 R. P. M. Motor, \$75.00.
1 G. E. 30 H. P. 500-volt 625 R. P. M. Motor, \$150.00.
1 W. H. 20 H. P. 500-volt 600 R. P. M. Motor, \$100.00.
2 W. H. 11 H. P. 500-volt 650 R. P. M. Motors, \$50.00 each.
These Motors are in first-class running condition and ready for immediate delivery.

PIEDMONT IRON & METAL CO.
BALTIMORE, MD.

FOR SALE CHEAP

One Land Pile Driver, 3000-lb. hammer, 50 ways and steel rollers.
Four Steel-Guyed Stacks, 6"x10".
One Steel Self-Supporting Stack, 10"x15".

CENTRAL TRANSFER CO.

415 N. Front St **BALTIMORE, MD.**

FOR SALE

1 40 H. P. Westinghouse Engine, 25 K. W., 110-volt dynamo.
2 New 54" Vertical Boring Mills.
3 1" Bolt Cutters.

Detrick & Harvey Machine Company
BALTIMORE, MD.

Tampa Machinery Exchange

TAMPA, FLA.

Buy, Sell and Exchange Machinery of All Kinds

WRITE US YOUR WANTS

Boilers For Sale

5—550 H. P. Altman Taylor B. & W. type, 150 lbs. pressure, complete, with steel supporting structure—arranged to set two in battery, one battery equipped with Taylor stokers.

HENRY R. KENT & CO.

141 Broadway **New York, N. Y.**

FOR SALE

P I P E

Second-Hand

All Sizes, ½" to 24"

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10,000 feet 22" Riveted Steel Dredge Pipe (first-class condition, practically good as new) at 50c. per foot f. o. b. cars, for immediate shipment.

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Train, two 21" Roughing Mills.

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200 H. P. Erie City, 150 lbs. pressure.

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100 lineal feet of Concrete Chute, 8 or 10 inch.

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PROMPT DELIVERY.

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Certificates of Inspection by Hildreth &
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assuring absolutely first quality, furnished
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About 700 Tons, 56 lbs. per yard,

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New Steel Rails

All Weights.

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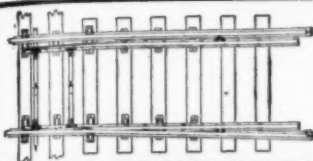
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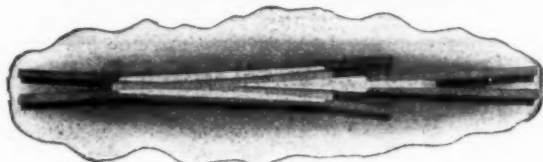
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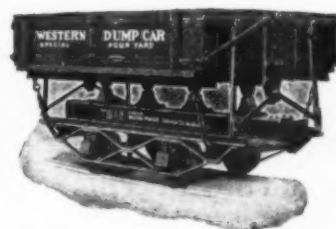
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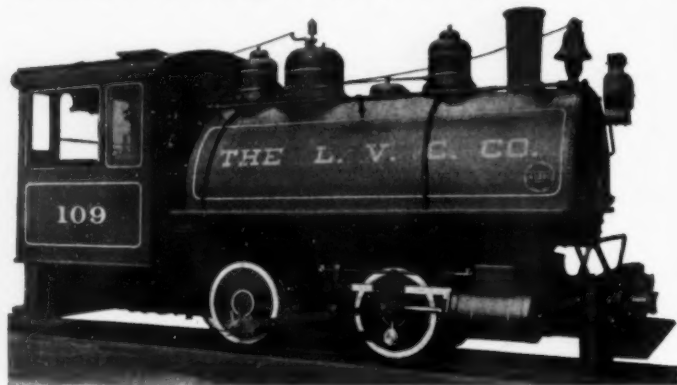
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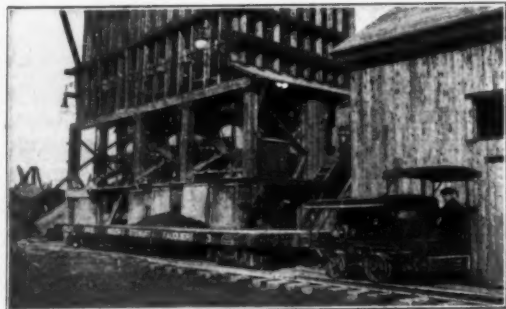


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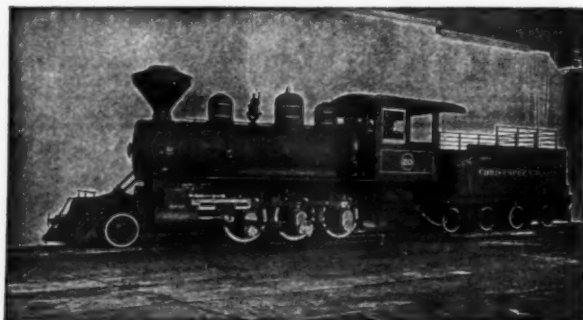
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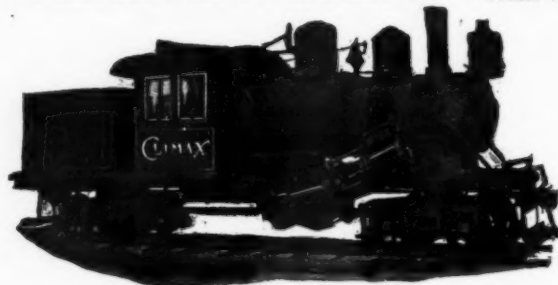
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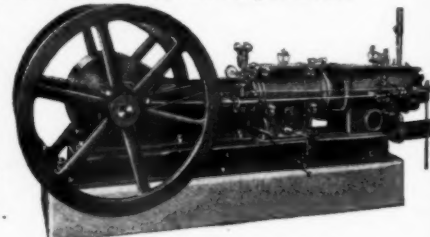
200 cubic ft. of free air per minute delivered at 100 lbs. pressure at a power cost of 9c. per hour.

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Will run on Crude Oil, Fuel Oil, Engine Distillate, Kerosene, Solar Oil or Gasoline.

Has Valveless Two-Cycle Power Cylinder; Governed Fuel Injection; Hot Plate Ignition; Crosshead Construction; Perfect Scavenging.

Has no Valves, Carburetor, Magneto or other Electric Firing Devices.



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Stationary, Skid Mounted (Semi Portable) or Truck Mounted for Field Work.

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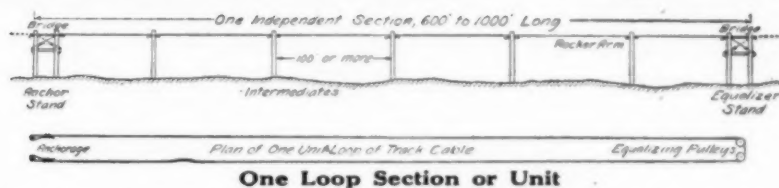
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Each loop is of convenient length, determined by conditions, and may range from 600 to 1000 feet. The loops terminate in equalizer stands and anchor stands alternately placed.

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Of course things do not always work out as smoothly as this for rapid construction nor is it always economical or indeed necessary. The point is, however, that in emergency work the time of construction can be enormously shortened over that required for any other tramway which must necessarily be built as a whole.

Respectfully submitted,

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B. & B. Rope Prevents Serious Accident at Panama-Pacific Exposition



A STIFF-LEG of this derrick at Machinery Hall broke squarely in two. The derrick was 125 feet above the ground and carrying a load of 50 tons. Lives and property were in imminent danger.

But the load didn't fall!

It was held securely by $\frac{3}{4}$ -inch B. & B. rope extending from the goose-neck iron, down the stiff-leg, over the plate of the tower and down to a point near the sand box.

It was put there for such an emergency.

And it met that emergency squarely.

Another derrick on the other tower of this building is safeguarded the very same way.

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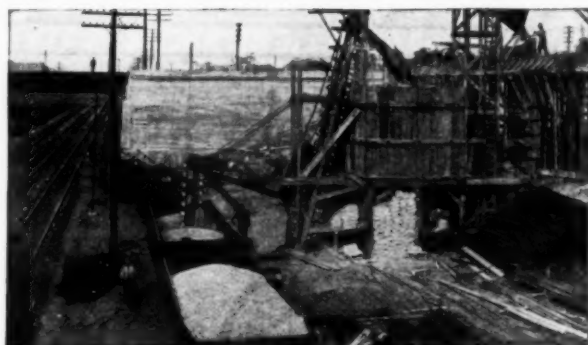
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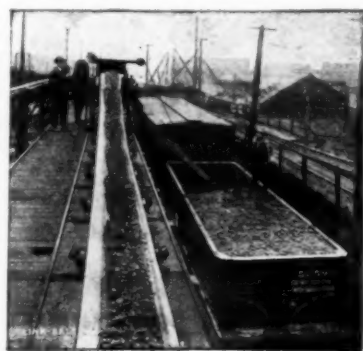
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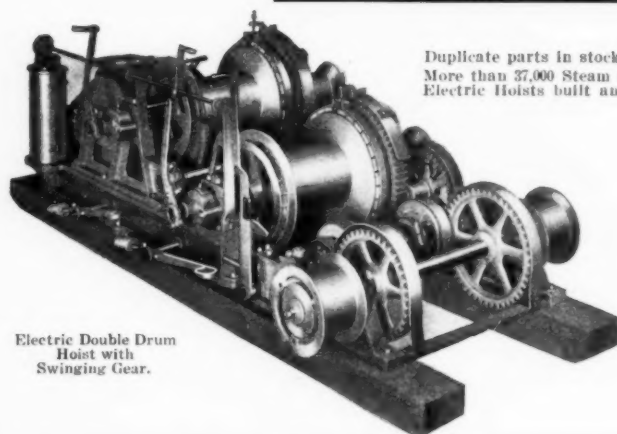
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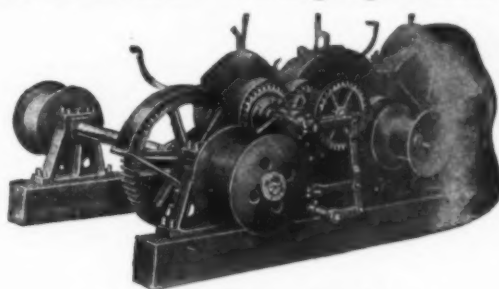
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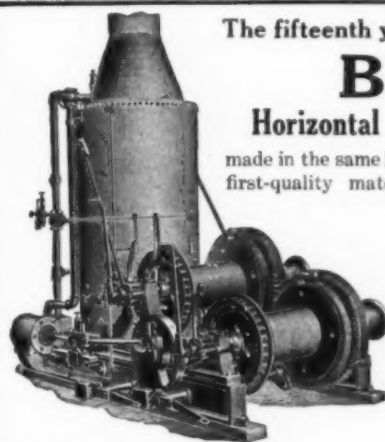


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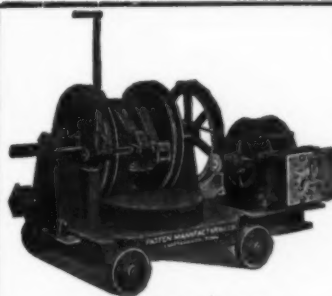
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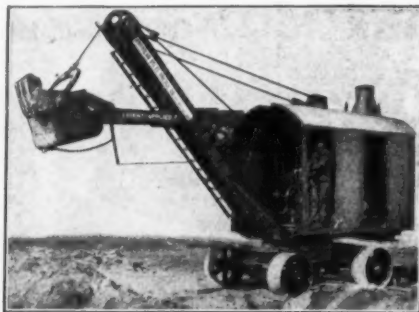
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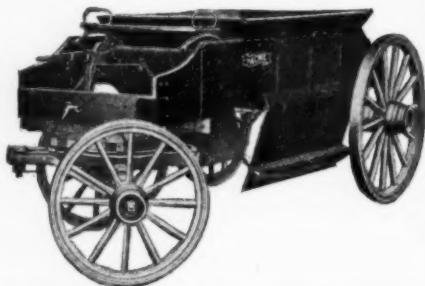
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Station H

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Contractors find many uses for HAYWARD ORANGE PEEL and CLAM SHELL BUCKETS



Illustration A-2425. In the building of a breakwater at Mackinaw Islands, Mich., a 3-blade Hayward Orange Peel Bucket was used for loading a scow with large boulders, and later for handling these same boulders in the construction of the breakwater.



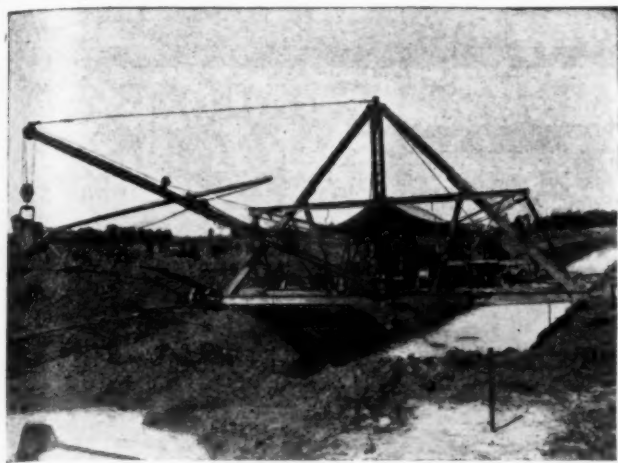
Illustration A-2387. In this picture, taken at the Scotia Dam on the Mohawk River, a Hayward Clam Shell Bucket is being used to transfer onto a lighter a locomotive crane which had run off the railroad tracks into the river. Hayward Buckets are frequently found to be useful for other purposes than those for which they were designed.

Write for our Pamphlet 605 which contains many interesting illustrations

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BUILDERS OF DIGGING MACHINERY

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Bay City Land Dredge, 43' Span, $\frac{1}{2}$ Cubic Yard Dipper, Gas Engine Power. Operating Crew, Three Men.

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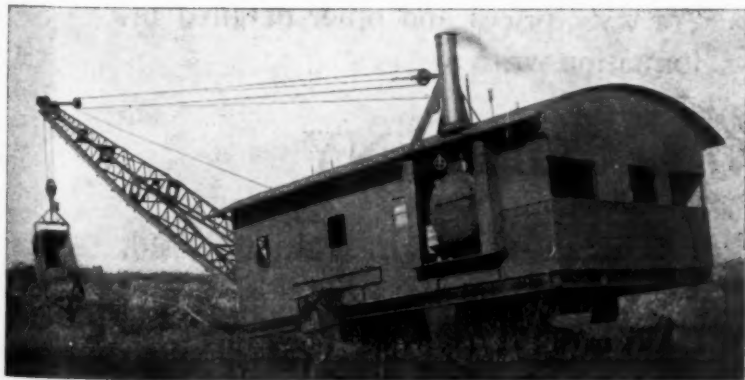
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In the first instance you can't get the best pavement for the least money.

But **in the long run** a Trinidad Lake asphalt pavement gives **more service** for the money expended than any other pavement gives.

You get more paving satisfaction and longer service out of every dollar spent for a Trinidad pavement than can be obtained in any other way.

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Round Edges vs. Square Edges on Paving Brick

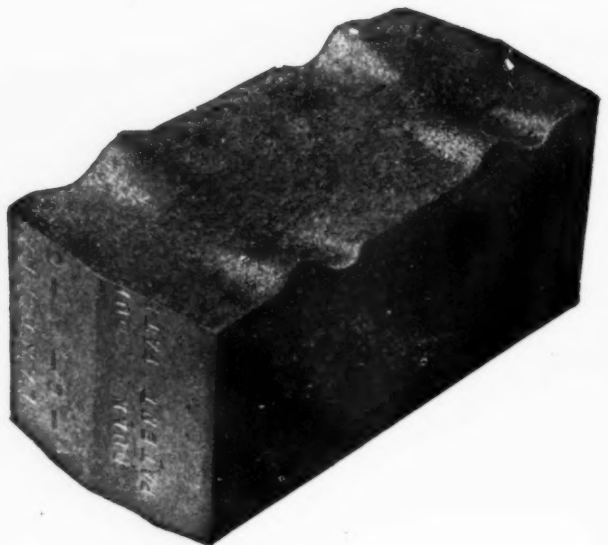
One of the Points in Which

DUNN Wire-Cut-Lug BRICK

excels re-pressed brick is that it can be made with sharp, square edges, whereas re-pressed brick must be made with rounded edges.

Note these illustrations which show how filler acts under traffic with the round-edged re-pressed brick and with squared-edged Dunn Wire-Cut-Lug Brick.

The square edges of the wire-cut-lug block make a smoother pavement than the round edges of the re-pressed block because the filler can readily be poured flush with the top of the pavement and does not break away at the surface under traffic as it often does from the round edges of the other. This is of particular importance where there is considerable iron-shod traffic, because the slight transverse depressions caused by this process tend gradually to increase in depth and width. Of course, on steep grades it is desirable to use blocks that are slightly beveled on one edge, to give better foothold. Such blocks can be readily formed in Dunn wire-cut-lug blocks.



Good pavement is further insured by Dunn Wire-Cut-Lug Brick because the uniformity of the lugs of the wire-cut block assures not only a uniform space for the filler between adjacent blocks, but makes it easier to lay them so as to get good alignment of the courses across the pavement. With the re-pressed blocks the lugs are occasionally poorly formed or damaged. Moreover, the smoother surface of the re-pressed block is not as satisfactory for the filler to adhere to as the rougher, wire-cut surface of the other.



Repressed Block



Wire-Cut-Lug Block

How Filler Acts under Traffic with Repressed and Wire-Cut Block

Users of Dunn Wire-Cut-Lug Brick are offered, gratis, the service of competent engineers who will help them secure good pavement construction.

Dunn Wire-Cut-Lug Brick can be supplied by independent, competing brick makers with a combined capacity exceeding 300,000,000, licensed after submitting proof that they can make good brick. Any reputable brick maker will be licensed under similar conditions.

Make your paving specifications call for Dunn Wire-Cut-Lug Brick. If you want details, we'll gladly give them.

Dunn Wire-Cut-Lug Brick Company CONNEAUT, OHIO

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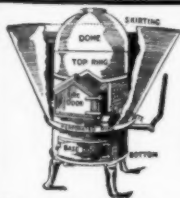
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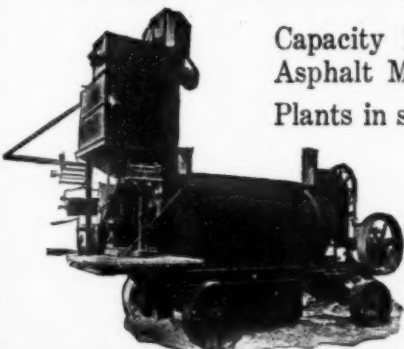
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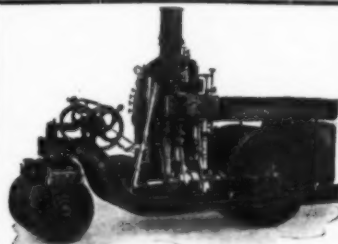
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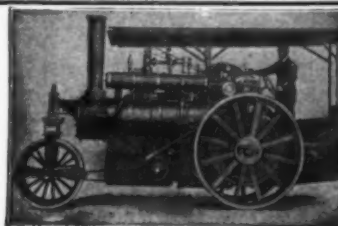
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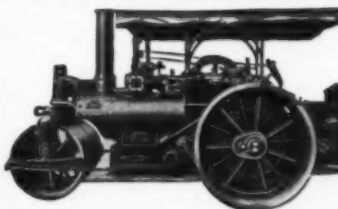
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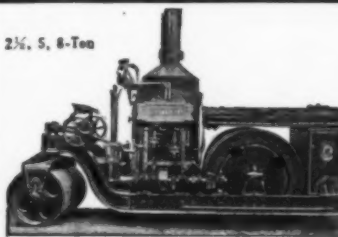


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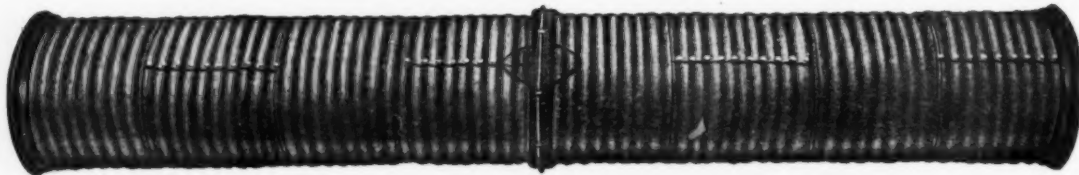
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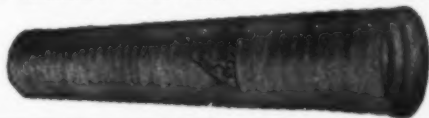
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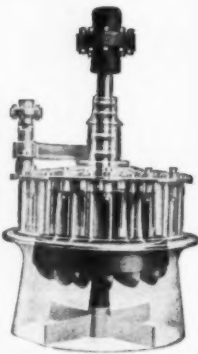
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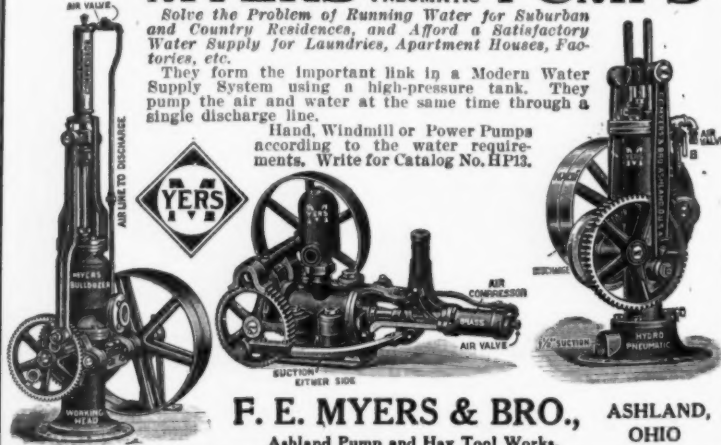
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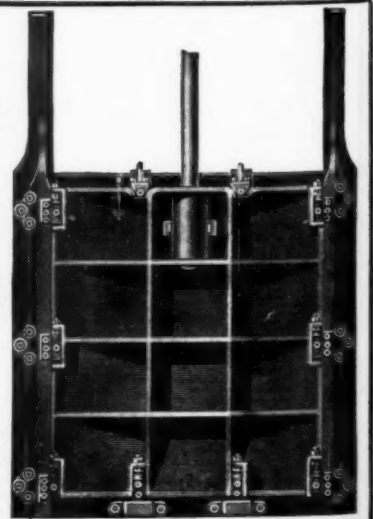
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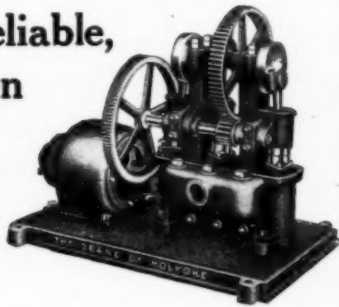
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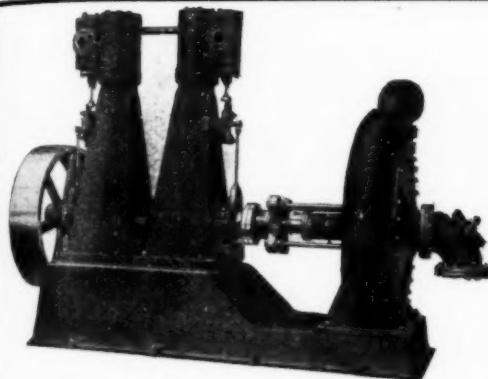
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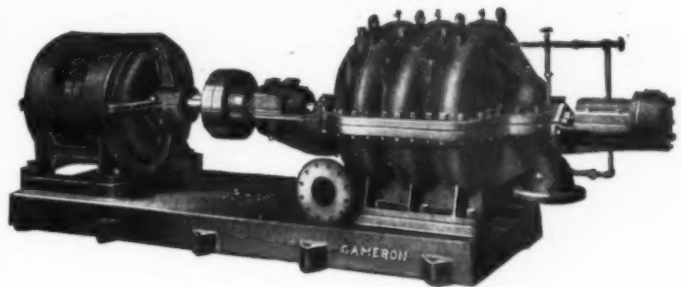
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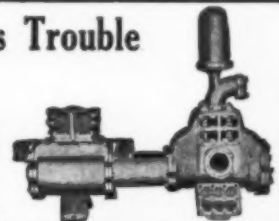
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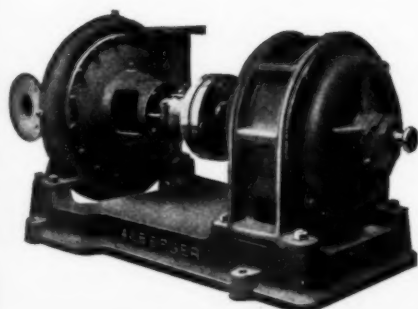
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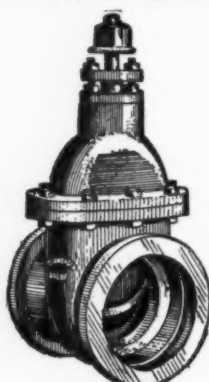


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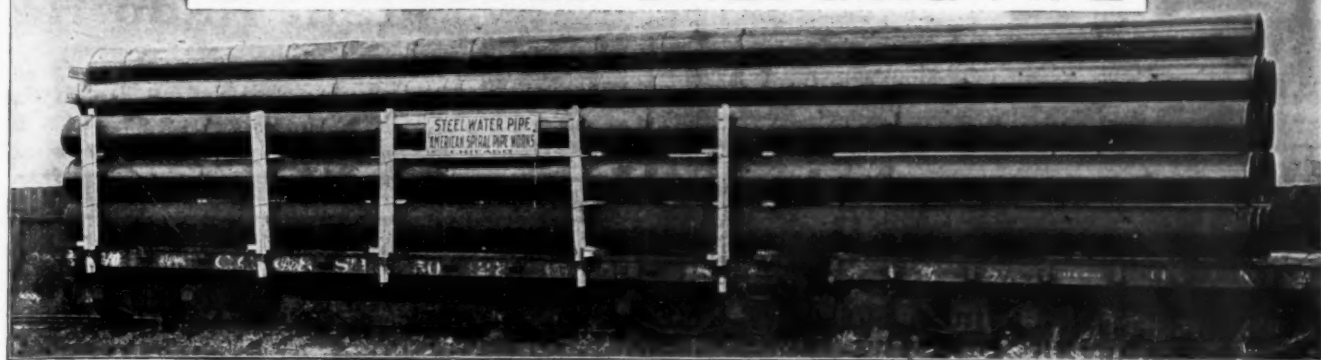
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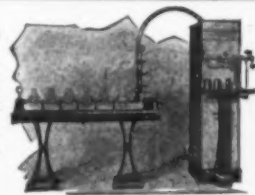
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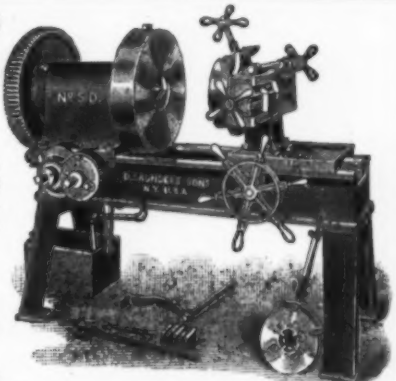
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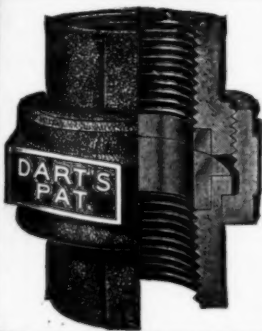
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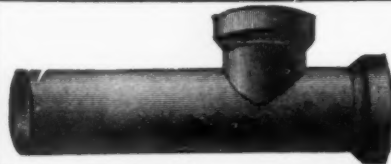
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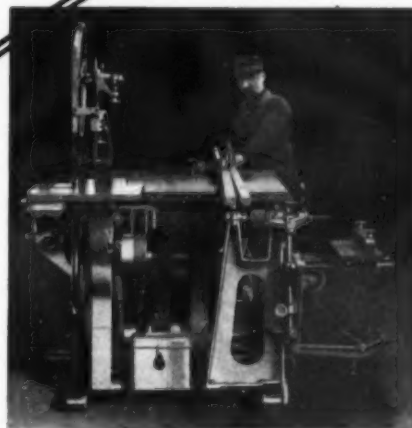
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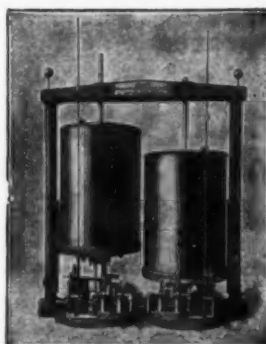


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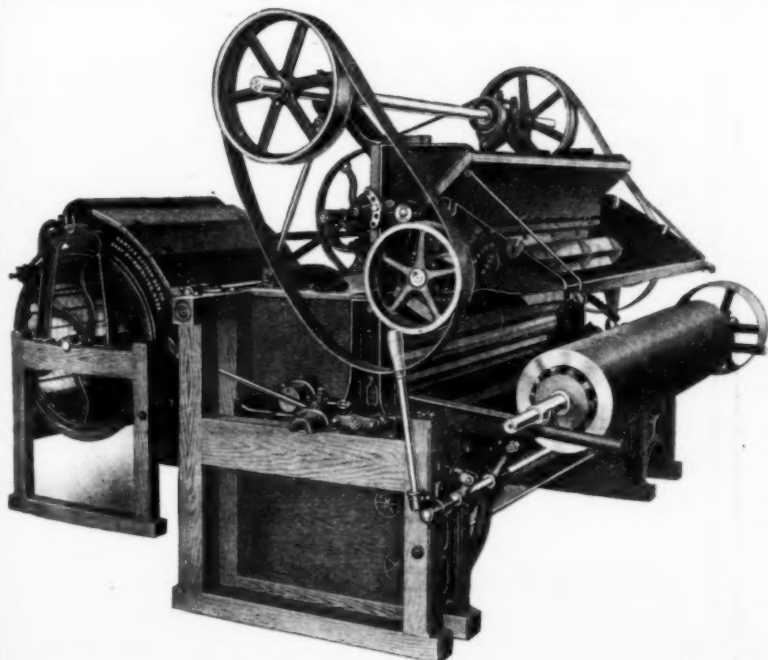
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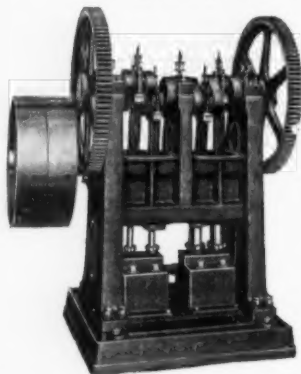
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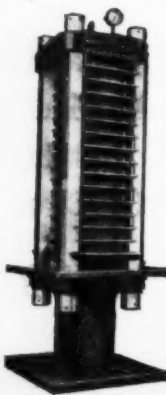
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Abundant supplies of coal, coke, iron, timber and other raw materials lie in the regions of Georgia and Alabama which are traversed by the

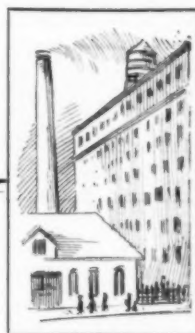
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Cheap electric power, numerous undeveloped water-powers, good home markets and excellent shipping facilities. Therefore, manufacturing conditions are ideal.

Many of the cities on the Central of Georgia Railway occupy advantageous positions for distributing warehouses, and a number of the larger northern and eastern manufacturers supply their southeastern trade from branch houses in these cities.

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J. M. MALLORY, Industrial Agent
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Ample railway facilities to all sections of the country and free sidings.

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What We Offer You

THERE are millions of acres of the most productive farm, pasture and orchard lands in the South offering distinct advantages to homeseekers. Good farmers can make more money in the South from the labor and capital invested than elsewhere in America. Careful investigation will prove this and also that the most pleasant, healthful home conditions are in this section. One can find no better region for dairying, or for poultry and live stock raising. Abundant grasses and forage plants, pure water, the long grazing seasons, the low cost of production and the good markets make the South unequalled today in opportunities for these industries. Nearly all authorities who have studied the situation agree that this is so. For fruit and truck raising, for general or special farming, there are all conditions for success. Lands in good locations are to be had at lowest prices for equally productive lands anywhere.

The South not only offers the opportunity for farm homeseekers, but needs them. The Southern Railway Lines want settlers in their territory who can turn the available lands into highly productive places to furnish the foodstuffs necessary for the South itself and to take advantage of the outside markets which may be supplied. They are anxious to build up their territory as part of their efforts to make their own properties more productive.

For this reason their Industrial and Agricultural Department is maintained. Its co-operation is offered in every way possible to the homeseeker who will investigate the opportunities of the South; every assistance is extended which will enable him to find the location where are the home conditions he desires and which will give him prosperity. Immigration agents will advise with him. The information about lands, crops and the various sections and conditions along the roads, carefully collected by the companies, is at his command. Careful attention will be given to secure for him the special information desired on particular subjects or localities. Booklets and other printed matter will be sent on application.

After the homeseeker is located, trained and practical agricultural field agents, live stock, dairy and poultry agents familiar with local conditions will be at his service in solving any of the problems which his new location may bring. Market agents will help him to find the best market for his products.

What we do for the homeseeker, we also do for the manufacturer looking for a location for his plant. Industrial agents will help him solve the questions as to the proper point where raw materials may be satisfactorily assembled; where labor, power, transportation and market conditions are best; where necessary lands are properly located and to be had; where local capital, if wanted, will join in building the plant, and where all the other conditions which help to make the success of the industry and the welfare of its labor are to be found.

We offer our services in behalf of a territory reached by nearly 10,000 miles of railway, the people of that territory and a company which is earnestly at work in co-operation with every person or interest affected to build up the territory and advance the fortunes of those who are developing the lands and the many opportunities in the South.

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Vast Latent Wealth Of a Wonderful Country

The territory opened up by this railroad is practically a new, virgin land, rich in minerals, timbers, water powers, agricultural opportunities and in commercial and industrial possibilities of every description awaiting large development.

With the building of the Clinchfield a remarkable transformation has taken place; manufacturing plants have been established to utilize varied mineral deposits; great timber areas have been opened up; more attention is being devoted to farming, fruit growing, cattle raising, etc.; new towns are being developed, and on every hand can be seen an industrial activity that is indicative of greater things in the future.

The Clinchfield, with its connections, affords distribution facilities which enable the products of its territory to be distributed to the country's best markets.

Both the Norfolk & Western and the Southern Railways are crossed, giving outlet to the North and East on the one hand and the South and Southwest on the other.

At its southern end connections are made with the Seaboard Air Line, the Atlantic Coast Line and the Southern Railways, affording distribution throughout the Southern States, and to seaports for coastwise and foreign trade.

Its Elkhorn Extension, soon to be thrown open to traffic, will carry it into Eastern Kentucky, where it will have connections with the Chesapeake & Ohio and other roads affording Western outlets.

Occupying a strategic position in relation to the country's great consuming areas, with an abundance of raw materials to manufacture a wide range of products, with soil and climate suitable for raising farm products of all kinds, with climatic and scenic advantages not surpassed or equalled in America, the Clinchfield territory presents inviting opportunities to investors, manufacturers, home seekers and farmers.

Let us tell you of the special opportunities in the Clinchfield territory for the investor, manufacturer and farmer.

Carolina, Clinchfield & Ohio Rwy.

"The Road of Opportunity"

R. F. Brewer, Industrial Agent

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All Crops Yielding High Prices per Acre are Grown in FLORIDA

The biggest opportunity before the American farmer now is the raising of food products.

The temporary decrease in the demand for cotton, brought about by the European war, is paralleled by the certainty of an increase in demand for foodstuffs in the immediate future.

The world naturally looks to America to supply the deficiency of foodstuffs, and especially to those parts of America where diversified crops can be grown to best advantage.

The following table, based upon figures of the United States Department of Agriculture, strikingly emphasizes Florida's complete advantages of soil and climate for raising a wide range of crops that yield the highest price per acre:

AVERAGE CROP VALUE PER ACRE.

Crop.	Acreage.	Value.	Value per acre
Cotton	36,011,000	\$887,350,000	\$24 64
Corn	105,820,000	1,692,092,000	15 99
Wheat	50,184,000	610,122,000	12 15
Hay	48,954,000	797,077,000	16 28
Oats	38,399,000	439,596,000	11 45
Barley	7,499,000	95,731,000	12 76
Orchard fruits.....	4,000,000	140,867,000	35 23
Irish potatoes.....	3,668,000	227,903,000	62 13
Garden vegetables.....	2,763,000	216,257,000	78 19
Rye	2,557,000	26,220,000	10 25
Flaxseed	2,291,000	21,399,000	9 34
Tobacco	1,216,000	122,481,000	101 55
Peanuts	870,000	18,272,000	21 00
Rice	827,000	22,090,000	26 70
Buckwheat	805,000	10,445,000	12 97
Sweet potatoes.....	625,000	42,884,000	68 61
Sugar beets.....	577,000	34,420,000	59 65
Citrus fruits.....	275,000	23,000,000	83 64
Small fruits.....	272,000	29,974,000	110 19
Sugar-cane	248,000	21,000,000	84 68
Total.....	307,861,000	\$5,479,180,000	\$17 79

Study this table carefully.

You will note that all the high values per acre are of crops that produce abundantly in Florida.

Corn	Hay	Irish Potatoes	Tobacco	Sugar Cane	Citrus Fruits
Cotton	Rice	Garden Vegetables	Peanuts	Sweet Potatoes	Small Fruits

Crops in Florida mature earlier than elsewhere, giving this State the advantage of higher prices that come to products first reaching the market.

All along the East Coast of Florida, from Jacksonville down, are splendid opportunities for the farmer to raise these profitable crops, and any information desired will be gladly furnished.

FLORIDA EAST COAST RAILWAY (FLAGLER SYSTEM)

J. E. INGRAHAM, Vice-President

ST. AUGUSTINE, FLA.

FLORIDA'S ADVANCEMENT

Report of the Commissioner of Agriculture for the years 1913-14 contains a record of advancement rarely equalled and of interest to many. These figures answer numerous live questions arising in the minds of prospective homemakers and investors. They tell the truth about the actual live conditions in this State of wonder with its variety of soil and agricultural production, where the possibilities for further advancement and extension of profitable endeavor attract so many.

VALUE OF ALL FARM PRODUCTS

1909-10	1913-14
\$56,712,734	\$83,937,135
Increase, \$27,250,000	

Now observe some of the items which go to make up this advancement:

FRUIT PRODUCTS

1909-10	1913-14
\$5,905,727	\$13,447,435
Increase, \$7,500,000	

And by comparison it's seen that this increase is steady and consistent, as the values for 1911-12 were \$10,025,163. These figures afford direct proof of the citrus fruit advancement, and, consequently, the proof that here is the citrus center of the United States.

LIVE STOCK RAISING AND DAIRY PRODUCTS

show gratifying increases and are typical of the various profitable pursuits, which can be made sources of wealth:

LIVE STOCK VALUES

1909-10	1913-14
\$23,967,501	\$29,541,931
Increase, \$5,500,000	

DAIRY PRODUCTS

1909-10	1913-14
\$2,851,479	\$4,130,925
Increase, \$1,250,000	

For many years its large open ranges were profitable. The breeding of better stock—cattle tick eradication—the growing of the many varieties of economically produced cattle foods on its arable lands, with 350-day growing season, has given this industry an added attraction, which bids fair to become one of the foremost in the State. The splendid efforts of the Experiment Station at Gainesville, liberal transportation arrangements for dairy products, and the awakening of the people to its values are factors of interest in observing this item of advancement. Cheap lands combined with cheap cows for foundation stock make it possible to start in the cattle business in the South with an outlay of far less capital than in most other sections of the country.

The Summer climate of Florida is equable. The extremes are lacking

You can find it pleasureable and profitable to make use of the reasonable-priced homeseekers' rates and make your selection during the coming months. We will help you.

SEABOARD AIR LINE RAILWAY

"The Progressive Railway of the South"

J. A. PRIDE, General Industrial Agent

NORFOLK, VIRGINIA

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Bolles Iron & Wire Wks., J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
Dietrich Brothers, Baltimore, Md.
Schreiber & Sons Co., The L., Cincinnati, O.
Snead Architectural Iron Wks., Louisville, Ky.

Arc Lamps. (See Lamps) [Arc and Incandescent.]

Art Glass.

Binswanger & Co., Memphis, Tenn.

Asbestos.

Asbestos Protected Metal Co., Pittsburgh, Pa.
Southern Asbestos Mfg. Co., Inc., Richmond, Va.

Asbestos Products.

Asbestos Protected Metal Co., Pittsburgh, Pa.
John-Manville Co., H. W., New York, N. Y.

Asphalt.

Barber Asphalt Paving Co., Philadelphia, Pa.
Gulf Refining Co., Pittsburg, Pa.
Standard Oil Co., Inc., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.

Asphalt Mixers.

Erie Machine Shops, Erie, Pa.

Asphalt Paving Plants.

Barber Asphalt Paving Co., Ironworks Works, Buffalo, N. Y.

Automobile. (Gasoline Passenger.)

White Co., The, Cleveland, Ohio.

Automobiles. (Second Hand.)

Mar-Del Mobile Co., Baltimore, Md.

Axles. [See Car Wheels, Axles and Trucks.]

Babbit Metal. [See Anti-Friction Metal.]

Ballast. (Railroad.)

American Ballast Co., Knoxville, Tenn.
Bald Mountain Quarry, Newson, N. C.
Chicamunga Quarry & Const. Co., Chattanooga, Tenn.
Kirkpatrick Sand & Cement Co., Birmingham, Ala.
Weston & Brookley Quarry Co., Columbia, S. C.

Bankers and Brokers.

Delaware Trust Co., Wilmington, Del.
Edwards, Geo. B., New York, N. Y.
Electric Bond & Share Co., New York, N. Y.
Halsey & Co., N. W., New York, N. Y.
Leach & Co., A. B., New York, N. Y.
Mercantile Trust & Deposit Co., Balto., Md.
New First National Bank, Columbus, Ohio.
Naveen & Co., John, Chicago, Ill.
Peabody, Houghteling & Co., Chicago, Ill.
Powell, Garard & Co., Chicago, Ill.
Provident Savings Bank & Trust Co., Cincinnati, O.
Southern States Developm't Co., New York, N. Y.

Banks.

First Nat'l Bank, of Key West, Key West, Fla.
First National Bank, Richmond, Va.
Merchants-Mechanics' Nat'l Bank, Baltimore, Md.
New First National Bank, Columbus, Ohio.
National Exchange Bank, Baltimore, Md.
Provident Savings Bank & Trust Co., Cincinnati, O.

Bank and Office Railings and Grilles. (Iron)

Bolles Iron & Wire Wks., J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
Cincinnati Iron Fence Co., Cincinnati, Ohio.
Dow Wire & Iron Works, Louisville, Ky.
Dufur & Co., Baltimore, Md.
Dufur, Baggett & Co., Baltimore, Md.
Euroka Supply Co., Chattanooga, Tenn.
Meyers Mfg. Co., F. J., Hamilton, O.
Ohio Elevator & Machine Co., The, Columbus, O.

Barges. (Steel)

American Bridge Co., of New York, N. Y.

Bar Iron. (Refined and Galvanized.)

Bourne-Fuller Co., The, Cleveland, Ohio.
Carnegie Steel Co., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.

Bars. (Steel, Rounds, Plates and Squares.)

Gulf States Steel Co., Birmingham, Ala.
Farde Works, Co., Perth Amboy, N. J.

Bars, Wire, Fabric, etc. (For Reinforced Concrete.)

Cincinnati Iron & Steel Co., Cincinnati, O.
Corrugated Bar Co., Buffalo, N. Y.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Laclede Steel Co., St. Louis, Mo.

Bearings. (Oilless.)

Metaline Co., Long Island City, N. Y.

Bedford Stone

Bedford Steam Stone Works, Bedford, Ind.

Belting. (Leather, Canvas, Rubber.)

American Supply Co., Providence, R. I.
Bailey-Leiby Co., Charleston, S. C.
Baltimore Belting Co., Baltimore, Md.
Cameron & Barkley Co., Charleston, S. C.
Chesapeake Belting Co., Baltimore, Md.
Druid Oak Belting Co., Inc., Baltimore, Md.
Freadrich Belting Co., St. Louis, Mo.
Gandy Belting Co., Baltimore, Md.
Goodyear Tire & Rubber Co., Akron, Ohio.
Graton & Knight Mfg. Co., Worcester, Mass.
Main Belting Co., Phila., Pa.
Scharen Co., Chas. A., New York, N. Y.
Smith-Courtesy Co., Richmond, Va.

Belting. (Chain.)

Bartlett & Snow Co., C. O., Cleveland, O.
Calkwell & Sons Co., W. W., Chicago, Ill.
Jeffery Mfg. Co., Columbus, O.
Link Belt Co., Philadelphia, Pa.

Belt Cement.

Graton & Knight Mfg. Co., Worcester, Mass.

Belt Conveyors.

Jeffery Mfg. Co., Columbus, O.

Belt Dressing.

Dixon Crucible Co., Joseph, Jersey City, N. J.
Gandy Belting Co., Baltimore, Md.
Graton & Knight Mfg. Co., Worcester, Mass.

Belt Lacing. (Leather.)

Graton & Knight Mfg. Co., Worcester, Mass.

Belt Lacing and Supplies. [See Belting.

Leather, Canvas, Rubber.]

Bicarbonate Soda. (Sap Stain Lumber Dip.)

Church & Dwight Co., New York, N. Y.

Billets. (Basic Open Hearth Quality.)

Gulf States Steel Co., Birmingham, Ala.

Blackboards. (Slate.)

East Bangor Con. Slate Co., The, East Bangor, Pa.
Johnson, E. J., New York, N. Y.

Blocks. (Paving Cressed.)

American Cressed Works, New Orleans, La.

Block Fillers

Barber Asphalt Paving Co., Philadelphia, Pa.
Barrett Mfg. Co., Phila., Pa.
Standard Oil Co., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.

Blowers and Exhaust Fans.

American Blower Co., Detroit, Mich.
Buffalo Forge Co., Buffalo, N. Y.
General Electric Co., Schenectady, N. Y.
Green Fuel Economiser Co., Matamoras, N. Y.
Raymond Bros. Impact Fm. Co., Chicago, Ill.
South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.
Starveant Co., B. F., Hyde Park, Boston, Mass.

Blueprinters.

Ohlbrecht Co., Richmond, Va.

Boilers.

Babcock & Wilcox Co., New York, N. Y.
Cameron & Barkley Co., Charleston, S. C.
Casey-Hedges Co., Chattanooga, Tenn.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago House Wrecking Co., Chicago, Ill.
Coatesville Boiler Works, Coatesville, Pa.
Cole Mfg. Co., R. D., Newark, Ga.
Hartley Boiler Works, Montgomery, Ala.
Keeler Co., E., Williamsport, Pa.
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.
Lombard Iron Works, Augusta, Ga.
Mechanics Iron Works, Charlotte, N. C.
Murray Iron Works, Burlington, Ia.
Phoenix Iron Works Co., Meadville, Pa.
Schneid Iron Works, Macon, Ga.
Southern Engine & Boiler Works, Jackson, Tenn.
Southern Boiler & Tank Works, Memphis, Tenn.
Val & Murdoch Iron Works, Charleston, S. C.
Vogt Machine Co., Henry, Louisville, Ky.
Wah & Weldner Boiler Co., Chattanooga, Tenn.
Zelicker Supply Co., Walter A., St. Louis, Mo.

Boiler Covering.

Chesapeake Roofing & Pipe Covering Co., Inc., Baltimore, Md.

Boiler Graphite.

Dixon Crucible Co., Joseph, Jersey City, N. J.

Boiler Tubes. [See Tubes, Boiler.]

Bolts, Nuts, Rivets, Studs and Washers.

Progressive Mfg. Co., Torrington, Conn.
Republic Iron & Steel Co., Youngstown, O.
Upson Nut Co., The, Cleveland, O.

Bonds. (Surety, etc.)

Fidelity & Deposit Co., of Balto., Baltimore, Md.

Bottling Outfits.

Vilner Mfg. Co., Milwaukee, Wis.

Brass Goods.

Bailey-Leiby Co., Charleston, S. C.
Buckeye Iron & Brass Works, Dayton, O.
Lunkenheimer Co., The, Cincinnati, Ohio.
Powell Co., Wm., Cincinnati, O.

Brass Railing and Grilles.

Newman Mfg. Co., Cincinnati, Ohio.

Brewers' Machinery.

Vilner Mfg. Co., Milwaukee, Wis.

Brick. (Acid.)

Hood Brick Co., B. Mifflin, Atlanta, Ga.

Brick. (Building.)

Am. Enamelled Brick & Tile Co., New York, N. Y.
Brookhaven Pressed Brick & Mfg. Co., Brookhaven, Miss.
Hood Brick Co., B. Mifflin, Atlanta, Ga.
Hydraulic Press Brick Co., St. Louis, Mo.
Kingsport Brick Corp., Johnson City, Tenn.
Scott Brick Co., Alex. A., Knoxville, Tenn.
Standard Brick Co., Macon, Ga.

Brick. (Enamelled.)

Am. Enamelled Brick & Tile Co., New York, N. Y.

Brick. (Fire.)

Brookhaven Pressed Brick & Mfg. Co., Brookhaven, Miss.

Kilian Fireproofing & Brick Works, Killian, S. O.

Louisville Fire Brick Works, Highland Park, Ky.

Mexico Brick & Fire Clay Co., Mexico, Mo.

Pomona Terra-Cotta Co., Pomona, N. O.

Standard Brick Co., Macon, Ga.

Stevens' Sons Co., H., Macon, Ga.

Union Mining Co., Mt. Savage, Md.

Brick. (Paving.)

Carlyle Paving Brick Co., Portsmouth, O.

Copeland-Ingles Shale Brick Co., Birmingham, Ala.

Dunn Wire-Cut-Lug Brick Co., Conneaut, Ohio.

Southern Clay Mfg. Co., Chattanooga, Tenn.

Standard Brick Co., Macon, Ga.

Brick and Clayworking Machinery and Supplies.

Chase Fdry. & Mfg. Co., Columbus, O.
Fernhills Brick Machinery Co., St. Louis, Mo.
Freese & Co., E. M., Galton, O.
Steele & Sons, J. C., Statesville, N. C.

Bridges. (Concrete.)

Cunningham Construction Co., Shreveport, La.

Luten, Daniel B., Indianapolis, Ind.

Requarth Co., O. W., Charlotte, N. C.

Turner, O. A. P., Minneapolis, Minn.

Bridges. (Rolling Lift.)

Scherzer Rolling Lift Bridge Co., Chicago, Ill.

Bridges. (Steel.)

American Bridge Co., of New York, N. Y.
Reimont Iron Works, Philadelphia, Pa.
Case Crane & Engineering Co., Columbus, Ohio.
Champion Bridge Co., Wilmington, Ohio.
Chicago Bridge & Iron Works, Chicago, Ill.
Cunningham Construction Co., Shreveport, La.
East St. Louis Bridge Co., East St. Louis, Ill.
Richmond Structural Steel Co., Richmond, Va.
Scherzer Rolling Lift Bridge Co., Chicago, Ill.
Vincennes Bridge Co., Vincennes, Ind.
Virginia Bridge & Iron Co., Roanoke, Va.

Bridge and Structural Iron Paints.

Chattanooga Paint Co., Chattanooga, Tenn.

Bridge Builders. (Timber.)

Murray & Co., Inc., W. D., Norfolk, Va.

Brimstone.

Union Sulphur Co., New York, N. Y.

Buckets. (Oam Shell.)

Hayward Company, New York, N. Y.

Williams Company, G. H., Cleveland, Ohio.

Buckets. (Dredging, Excavating, Sewer, etc.)

Hayward Co., New York, N. Y.

Monaghan Mch. Co., Chicago, Ill.

Williams Co., The G. H., Cleveland, O.

Buckets. (Grab.)

Hunt Co., Inc., C. W., West New Brighton, N. Y.

Buckets. (Orange Peel.)

Hayward Co., The, New York, N. Y.

Buckets. (Ore Handling.)

Caldwell & Son Co., H. W., Chicago, Ill.

Hayward Co., New York, N. Y.

Link-Belt Co., Philadelphia, Pa.

Williams Co., The G. H., Cleveland, O.

Burr Stones.

Starr Co., B. F., Baltimore, Md.

Builders and Contractors.

Interstate Const. Co., Louisville, Ky.
Stone & Webster Eng. Corp., Boston, Mass.

Turner, O. A. P., Minneapolis, Minn.

White Companies, J. G., New York, N. Y.

Building Stone

Atlantic Stone Co., Atlanta, Ga.

Bedford Steam Stone Works, Bedford, Ind.

Building Supplies.

Chicago House Wrecking Co., Chicago, Ill.

Southern Building Material Co., Norfolk, Va.

Burners. (Oil.) [See Fuel Oil Equipments.]

Bushings. (Oilless, for Loose Pulleys.)

Metaline Co., Long Island City, N. Y.

Cables.

Broderick & Bascom Rope Co., St. Louis, Mo.

Roebing's Sons Co., John A., Trenton, N. J.

Cables and Wires. (Insulated.)

American Steel & Wire Co., Chicago, Ill.

Cableways. (Overhead Suspension.)

Amburns Co., (Tramway Department, New York, N. Y.)

Broderick & Bascom Rope Co., St. Louis, Mo.

Flory Mfg. Co., S., Bangor, Pa.

Lidgerwood Mfg. Co., New York, N. Y.

Roebing's Sons Co., John A., Trenton, N. J.

Can and Box Making Machinery. (Tin.)

Alms Machine Co., Max, Mt. Vernon, N. Y.

Hill Co., E. W., Brooklyn, N. Y.

Canning Machinery and Supplies.

Robins & Co., A. K., Baltimore, Md.

Sprague Canning Machinery Co., Chicago, Ill.

Carborundum Paper and Cloth.

Carborundum Co., Niagara Falls, N. Y.

Cars. (Dump, Industrial, Logging and Mine.)

Austin Mfg. Co., Chicago, Ill.

Case Fdry. & Mfg. Co., Columbus, O.

Curd, Geo. B., Cincinnati, Ohio.

Electric Wheel Co., (Mfrs.), Quincy, Ill.

Georgia Car & Locomotive Co., Atlanta, Ga.

Hunt Co., C. W., Inc., West New Brighton, N. Y.

Kilbourne & Jacobs Mfg. Co., Columbus, Ohio.

Oliver Mfg. Co., Wm. J., Knoxville, Tenn.

Western Wheeled Scraper Co., Aurora, Ill.

Cars. (Passenger and Freight.) [See Railroad Equipment and Supplies.]

Car Unloaders.

Bonney Supply Co., Rochester, N. Y.

Car Wheels, Axles and Trucks.

Carnegie Steel Co., Pittsburgh, Pa.

Oliver Mfg. Co., Wm. J., Knoxville, Tenn.

Cast Iron Pipe. (See Pipe.) [Cast Iron.]

Castings. (Aluminum.)

Aluminum Company of America, Pittsburgh, Pa.

Castings. (Brass and Bronze.)

McKenna Bros. Brass Co., Pittsburgh, Pa.

Triumph Electric Co., Cincinnati, O.

Castings. (Gray Iron.)

Columbian Iron Works, Chattanooga, Tenn.

Georgia Car & Locomotive Co., Atlanta, Ga.

Glamorgan Pipe & Foundry Co., Lynchburg, Va.

Hill's Sons, D. F., Hagerstown, Md.

Phoenix Iron Works Co., Meadville, Pa.

U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.

Val & Murdoch Iron Works, Charleston, S. C.

Westbrook Elevator Co., Danville, Va.

Castings. (Malleable Iron and Steel.)

Columbus Malleable Iron Co., Columbus, Ohio.

General Malleable Co., Warren, O.

Marion Malleable Iron Works, The, Marion, Ind.

- Contractors (Drainage)**
 Globe Dredging Co., Savannah, Ga.
 Thompson & Mosley, Inc., Greensboro, N. C.
- Contractors (Dredging)**
 Globe Dredging Co., Savannah, Ga.
- Contractors (Hydro-Electric Developments)**
 Requa Co., O. W., Charlotte, N. C.
- Contractors (Reinforced Concrete)**
 Hayward & Ashby, Rocky Mount, N. C.
 Requa Co., O. W., Charlotte, N. C.
- Contractors (Water Supply)**
 Layne & Bowler Co., Houston, Tex.
- Contractors Machinery and Supplies. [See also Hoisting Machinery.]**
 American Clay Machinery Co., The, Bucyrus, Ohio.
 Austin Mfg. Co., Chicago, Ill.
 Brunner, Frederick, Pittsburgh, Pa.
 Erie Mfg. Co., The John F., Ravenna, O.
 Ford Geo. B., Cincinnati, O.
 Flory Mfg. Co., S., Bangor, Pa.
 Marine Metal & Supply Co., New York, N. Y.
 Milburn Co., Alex. N., Baltimore, Md.
 Mougan Mch. Co., Chicago, Ill.
 National Hoisting Engine Co., Harrison, N. J.
 Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
 Sherwood, E. C., New York, N. Y.
 Sterling Machinery Co., New York, N. Y.
 Taw & Williams, Cincinnati, Ohio.
- Conveying and Elevating Machinery.**
 Amberson Co., (Tramway Department), New York, N. Y.
 Bartlett & Snow Co., O. O., Cleveland, O.
 Caldwell & Son Co., H. W., Chicago, Ill.
 Flory Mfg. Co., S., Bangor, Pa.
 Guarantee Construction Co., New York, N. Y.
 Hunt Co., O. W., Inc., West New Brighton, N. Y.
 Jeffrey Mfg. Co., Columbus, O.
 Legerwood Mfg. Co., New York, N. Y.
 Link-Belt Co., Philadelphia, Pa.
 Mathews Gravity Carrier Co., Ellwood City, Pa.
 McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
 Waller Mfg. Co., Chicago, Ill.
- Copperage Stock and Box Shook Machinery.**
 Gerlach Co., Peter, Cleveland, O.
- Cordage.**
 Broderick & Bascom Rope Co., St. Louis, Mo.
 Columbian Rope Co., Auburn, N. Y.
 Waterbury Co., New York, N. Y.
- Core Drilling.**
 Sprague & Henwood, Inc., Scranton, Pa.
- Corn-Mill Machinery.**
 Raymond Bros. Impact Pulv. Co., Chicago, Ill.
 Starr Co., H. F., Baltimore, Md.
 Wolf Co., Chambersburg, Pa.
- Cotton Oil and Products.**
 American Cotton Oil Co., New York, N. Y.
- Cotton Yarns. (Commission Merchants.)**
 Paulson, Linkroum & Co., New York, N. Y.
- Cotton-Gin Machinery.**
 Carver Cotton Gin Co., East Bridgewater, Mass.
 Continental Gin Co., Birmingham, Ala.
 Murray Co., The, Atlanta, Ga.
- Cotton-Mill Machinery.**
 Crompton & Knowles Loom Works, Worcester, Mass.
 Draper Co., Hopedale, Mass.
 Mason Machine Works, Taunton, Mass.
 Sax-Lowell Shop, Boston, Mass.
 Whitinsville Spin'g Ring Co., Whitinsville, Mass.
- Cotton-Mill Supplies.**
 American Supply Co., Providence, R. I.
 Crompton & Knowles Loom Works, Worcester, Mass.
 Whitinsville Spin'g Ring Co., Whitinsville, Mass.
- Cottonseed-Oil Machinery.**
 Buckeye Iron & Brass Works, Dayton, O.
 Burruss Engineering Co., Atlanta, Ga.
 Cardwell Machine Co., Richmond, Va.
 Carver Cotton Gin Co., East Bridgewater, Mass.
 Continental Gin Co., Birmingham, Ala.
 French Oil Mill Machinery Co., Piqua, O.
 Murray Co., The, Atlanta, Ga.
 Platt Iron Works Co., Dayton, Ohio.
 Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Couplings.**
 American Spiral Pipe Works, Chicago, Ill.
 Golden's Foundry & Machine Co., Columbus, Ga.
 Wood's Sons Co., T. B., Chambersburg, Pa.
- Couplings. (Car.)**
 Weimer Chain & Iron Co., Lebanon, Pa.
- Couplings. (Hose, Air, Gas, Steam and Water.)**
 National Tube Co., Pittsburgh, Pa.
- Coverings. (Pipe, Boiler, etc.)**
 Johns-Manville Co., H. W., New York, N. Y.
 Southern Asbestos Co., Inc., Richmond, Va.
- Cranes. (Locomotive.)**
 Ohio Locomotive Crane Co., Bucyrus, O.
- Cranes. (Traveling, Hand, Power, Hydraulic.)**
 Case Crane & Engineering Co., Columbus, Ohio.
 Spidel, J. G., Reading, Pa.
- Crayons.**
 Georgia Talc Co., Asheville, N. C.
 Lowell Crayon Co., Lowell, Mass.
- Crosscutting Equipment.**
 Casey-Hedges Co., Chattanooga, Tenn.
 Struthers-Wells Co., Warren, Pa.
 Walsh & Weider Boiler Co., Chattanooga, Tenn.
- Crosscutting Works.**
 American Crosscut Works, New Orleans, La.
 International Crosscut & Cons. Co., Galveston, Tex.
 National Lumber & Cross. Co., Texarkana, Ark.
 Southern Crosscutting Co., Ltd., Sibley, La.
 Southern Paving Const. Co., Chattanooga, Tenn.
 Southern Wood Preserving Co., Atlanta, Ga.
- Crossarms and Pins.**
 Western Electric Co., New York, N. Y.
- Crossarms. (Crosscut.)**
 American Crosscut Works, New Orleans, La.
 International Crosscut & Cons. Co., Galveston, Tex.
 National Lumber & Cross. Co., Texarkana, Ark.
 Southern Crosscutting Co., Ltd., Sibley, La.
 Southern Paving Const. Co., Chattanooga, Tenn.
 Southern Wood Preserving Co., Atlanta, Ga.
- Crossings. [See Railroad Frogs and Switches.]**
- Crosstie Machine.**
 Standard Portable Saw Mill Co., New-Orleans, La.
- Crossties. (Crosscut.)**
 American Crosscut Works, New Orleans, La.
 International Crosscut & Cons. Co., Galveston, Tex.
 National Lumber & Cross. Co., Texarkana, Ark.
 Southern Crosscutting Co., Ltd., Sibley, La.
 Southern Paving Const. Co., Chattanooga, Tenn.
 Southern Wood Preserving Co., Atlanta, Ga.
- Crossings. (Steel.)**
 Carnegie Steel Co., Pittsburgh, Pa.
- Crushed Stone. (Road Concrete and Ballast.)**
 American Ballast Co., Knoxville, Tenn.
 Atlantic Stone Co., Atlanta, Ga.
 Bald Mountain Quarry, Newson, N. C.
 Chickamauga Quarry & Construction Co., Chattanooga, Tenn.
 Kirkpatrick Sand & Cement Co., Birmingham, Ala.
 Weston Brook Quarry Co., Columbia, S. C.
- Crushers. (Corn and Cob.)**
 Gruendler Pat. Crusher & Pulv. Co., St. Louis, Mo.
 Jeffrey Mfg. Co., Columbus, O.
 Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Crushers. (Rock.)**
 Austin Mfg. Co., Chicago, Ill.
 Buchanan Co., Inc., O. G., New York, N. Y.
 Chalmers & Williams, Chicago Heights, Ill.
 Power & Mining Machinery Co., Oudaby, Wis.
 Raymond Bros. Impact Pulv. Co., Chicago, Ill.
 Universal Road Mch. Co., Kingston, N. Y.
 Western Wheelbarrow Scraper Co., Aurora, Ill.
- Crushing and Pulverizing Machinery.**
 Allis-Chalmers Mfg. Co., Milwaukee, Wis.
 Austin Mfg. Co., Chicago, Ill.
 Bartlett & Snow Co., O. O., Cleveland, O.
 Buchanan Co., Inc., O. G., New York, N. Y.
 Chalmers & Williams, Chicago Heights, Ill.
 Gruendler Pat. Crusher & Pulv. Co., St. Louis, Mo.
 Jeffrey Mfg. Co., Columbus, O.
 McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
 Raymond Bros. Impact Pulv. Co., Chicago, Ill.
 Stedman's Foundry & Machine Works, Aurora, Ind.
 Western Wheelbarrow Scraper Co., Aurora, Ill.
- Culvert Pipe. (Cast Iron.)**
 American Cast Iron Pipe Co., Birmingham, Ala.
 American Pipe & Const. Co., Philadelphia, Pa.
 Clow & Sons, James B., Chicago, Ill.
 Donaldson Iron Co., Emaus, Pa.
 Longman Pipe & Foundry Co., Lynchburg, Va.
 Lynchburg Foundry Co., Lynchburg, Va.
 Maestlin Iron & Steel Co., Maestlin, Ohio.
 U. S. Cast Iron Pipe & Fdy. Co., Burlington, N. J.
 Wood & Co., R. D., Philadelphia, Pa.
- Culverts. (Corrugated Metal.)**
 American Sheet & Tin Plate Co., Pittsburgh, Pa.
 Arno-Culvert Publicity Bureau, Cincinnati, O.
 Atlas Metal Works, Dallas, Tex.
 Canton Culvert and Silo Co., The, Canton, O.
 Dixie Culvert & Metal Co., Atlanta, Ga.
 Fouts Co., C. C., Middletown, O.
 Gallion Iron Works & Mfg. Co., The, Gallion, Ohio.
 Lone Star Culvert Co., Houston, Tex.
 National Corrugated Culvert Mfg. Co., Warren, Pa.
 Newport Culvert Co., Inc., Newport, Ky.
 Salisbury Metal Culvert Co., Salisbury, N. C.
 Tennessee Metal Culvert Co., Nashville, Tenn.
 Virginia Metal & Culvert Co., Inc., Roanoke, Va.
- Culverts. (Vitriol Pipe.)**
 Southern Sewer Pipe Co., Birmingham, Ala.
 Stevens Sons Co., H., Macon, Ga.
- Curb Protector. (Steel.)**
 Steel Protected Concrete Co., Philadelphia, Pa.
- Cutter Grinders.**
 Vitriol Wheel Co., Westfield, Mass.
- Cutting. (Oxy-Acetylene Process.)**
 Prest-O-Lite Co., Inc., The, Indianapolis, Ind.
- Cuts. (Half Tone, Line, Etc.)**
 Alpha Photo Engraving Co., Balto. Md.
 Baltimore-Maryland Engraving Co., Baltimore, Md.
- Derricks and Derrick Fittings.**
 Byers Mach. Co., The John F., Ravenna, O.
 Hayward Co., The, New York, N. Y.
 Monaghan Machine Co., Chicago, Ill.
- Designers and Illustrators. (Printed Matter.)**
 Alpha Photo Engraving Co., Baltimore, Md.
 Baltimore-Maryland Engraving Co., Baltimore, Md.
- Diamond Core Drilling.**
 Sprague & Henwood, Inc., Scranton, Pa.
- Disposal Plants. (Garbage Incinerators.)**
 Stacy-Bates Co., Minneapolis, Minn.
- Ditching Machinery.**
 American Steel Dredge Co., Fort Wayne, Ind.
 Bay City Dredge Works, Bay City, Mich.
 Economy Excavator Co., Iowa Falls, Iowa.
 Fairbanks Steam Shovel Co., Marion, O.
 Hayward Co., The, New York, N. Y.
 Marion Steam Shovel Co., Marion, O.
 Monaghan Machine Co., Chicago, Ill.
 Thew Automatic Shovel Co., Lorain, Ohio.
 Williams Co., The, G. H., Cleveland, O.
- Doors. (Steel Rolling.)**
 Kinnear Mfg. Co., Columbus, O.
 Van Hurlingen, J. M., Atlanta, Ga.
- Doors. (Tin Clad.)**
 Victor Mfg. Co., Newburyport, Mass.
- Double Scamers.**
 Ams Machine Co., Max, Mt. Vernon, N. Y.
- Draftsman.**
 Childrey Co., Richmond, Va.
- Draftsmen's Supplies.**
 Weber & Co., F., Philadelphia, Pa.
- Dredging Contractors. [See Contractors (Dredging).]**
- Dredge Chains.**
 Weimer Chain & Iron Co., Lebanon, Pa.
- Dredges. [See Excavating Machinery.]**
- Drills. (Pneumatic.) [See also Drills Rock and Mining.]**
 Drills. (Prospecting.)
 Keystone Steam Well Mach. Co., Beaver Falls, Pa.
- Drills. (Rock and Mining.)**
 Jeffrey Mfg. Co., Columbus, O.
 Sullivan Mchry. Co., Chicago, Ill.
- Drills. (Twist.)**
 McKenna Bros. Brass Co., Pittsburgh, Pa.
 Morse Twist Drill & Mch. Co., New Bedford, Mass.
- Drive Well Points and Well Supplies.**
 National Tube Co., Pittsburgh, Pa.
- Drop Forgings.**
 American Spiral Pipe Works, Chicago, Ill.
- Drop Forging Machinery.**
 Rhee Co. E. W., Brooklyn, N. Y.
 Erie Foundry Co., Erie, Pa.
- Dryers. (Sand.) [See Sand Dryers.]**
- Dry Docks. (Ballers of)**
 American Bridge Co., of New York, N. Y.
- Drying Machinery.**
 American Process Co., New York, N. Y.
 Bailey-Lebby Co., The, Charleston, S. C.
 Buffalo Forge Co., Buffalo, N. Y.
 Coatsville, Boiler Works, Coatsville, Pa.
 Cammer & Son Co., F. D., The, Cleveland, Ohio.
 Hersey Manufacturing Co., South Boston, Mass.
 Ruggles-Coles Engineering Co., New York, N. Y.
 Sturtevant Co., B. F., Hyde Park, Boston, Mass.
- Dry Kilns.**
 Buffalo Forge Co., Buffalo, N. Y.
 Moore Dry Kiln Co., L., Jacksonville, Fla.
- Dry Kiln Equipment.**
 Moore Dry Kiln Co., L., Jacksonville, Fla.
- Dumbwaiters. (Hand Power.)**
 McKenna Bros. Brass Co., Pittsburgh, Pa.
 Spidel, J. G., Reading, Pa.
- Dust-Collecting System**
 Buffalo Forge Co., Buffalo, N. Y.
 King Co., F. E., Norfolk, Va.
 South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.
- Dynamite. (Industrial and Agricultural.)**
 Du Pont Powder Co., Wilmington, Del.
 Eysteons Nat'l Powder Co., Emporium, Pa.
- Dynamos and Motors.**
 Assets Purchasing Co., Wheeling, W. Va.
 General Electric Co., Schenectady, N. Y.
 Pan Electric Mfg. Co., St. Louis, Mo.
 Terry Steam Turbine Co., Hartford, Conn.
 Triumph Electric Co., Cincinnati, O.
 Western Electric Co., New York, N. Y.
- Eaves. (Trough.)**
 Edwards Mfg. Co., Cincinnati, O.
- Ejectors. (Sewage.)**
 Lunkenheimer Co., The, Cincinnati, O.
 Pacific Flush Tank Co., New York, N. Y.
- Electric Machinery. (Dynamos, Generators, Motors, etc.)**
 Allis-Chalmers Manufacturing Co., Milwaukee, Wis.
 American Elevator & Mch. Co., Louisville, Ky.
 Camstock Electric Co., High Point, N. C.
 Fairbanks-Morse & Co., Atlanta, Ga.
 General Electric Co., Schenectady, N. Y.
 Lee Electric Co., Baltimore, Md.
 Moore & Co., Edgar M., Pittsburgh, Pa.
 Pan Electric Mfg. Co., St. Louis, Mo.
 Piedmont Electric Co., Asheville, N. C.
 Schneitert Co., R., Philadelphia, Pa.
 Schroeder Electric Co., Evansville, Ind.
 Sturtevant Co., B. F., Hyde Park Boston, Mass.
 Triumph Electric Co., Cincinnati, O.
 Wilson Mch. Co., St. Louis, Mo.
- Electrical Contractors, Instruments and Supplies.**
 Camstock Electric Co., High Point, N. C.
 Economy Fuse & Mfg. Co., Chicago, Ill.
 General Electric Co., Schenectady, N. Y.
 Hill & Co., Walter E., Baltimore, Md.
 Lee Electric Co., Baltimore, Md.
 Levy-Morton Co., Columbus, Ga.
 Piedmont Electric Co., Asheville, N. C.
 Walker Electrical & Plumbing Co., Rome, Ga.
- Electric Light Plants. (Portable.)**
 Schroeder Electric Co., Evansville, Ind.
- Electro-Magnet. [See Magnet Electro.]**
- Elevating, Conveying and Power Transmission Machinery. [See also Conveying and Elevating Machinery and Power Transmission Mch.]**
- Elevator**
 ELECTRIC.
 American Electric Machine & Elevator Co., St. Louis, Mo.
 Carver Elevator Co., James H., Cincinnati, Ohio.
 Grove Mfg. Co., F., Evansville, Ind.
 K. C. Elevator Mfg. Co., Kansas City, Mo.
 Moffatt Machinery Mfg. Co., Charlotte, N. C.
 Ohio Elevator & Machine Co., Columbus, Ohio.
 Otis Elevator Co., New York, N. Y.
 Spidel, J. G., Reading, Pa.
 Warsaw Elevator Co., Baltimore, Md.
 Westbrook Elevator Co., Danville, Va.
- HAND AND BELT POWER.**
 American Electric Machine & Elevator Co., St. Louis, Mo.
 Carver Elevator Co., James H., Cincinnati, O.
 K. C. Elevator Mfg. Co., Kansas City, Mo.
 Moffatt Machinery Mfg. Co., Charlotte, N. C.
 Ohio Elevator & Machine Co., Columbus, O.
 Otis Elevator Co., New York, N. Y.
 Spidel, J. G., Reading, Pa.
 Westbrook Elevator Co., Danville, Va.
- HYDRAULIC.**
 American Electric Machine & Elevator Co., St. Louis, Mo.
 Carver Elevator Co., James H., Cincinnati, O.
 K. C. Elevator Mfg. Co., Kansas City, Mo.
 Moffatt Machinery Mfg. Co., Charlotte, N. C.
 Ohio Elevator & Machine Co., Columbus, O.
 Otis Elevator Co., New York, N. Y.
 Spidel, J. G., Reading, Pa.
 Westbrook Elevator Co., Danville, Va.
- STEAM HYDRAULIC**
 Ridgway & Son Co., The, Coatsville, Pa.
- Elevators. (Automatic.)**
 Mathews Gravity Carrier Co., Ellwood City, Pa.
- Elevators. (Portable for Warehouses, etc.)**
 Economy Engineering Co., Chicago, Ill.
- Elevator Bolts.**
 Upon Nut Co., The, Cleveland, O.
- Elevator Buckets.**
 Caldwell & Son Co., H. W., Chicago, Ill.
 Hendrick Mfg. Co., Carbondale, Pa.
 Jeffrey Mfg. Co., Columbus, O.
 Link-Belt Co., Philadelphia, Pa.
- Elevator Enclosures and Cabs.**
 Rolles Iron & Wire Works, J. E., Detroit, Mich.
 Dow Wire & Iron Works, Louisville, Ky.
 Dufur & Co., Baltimore, Md.
 Dufur, Hagert & Co., Baltimore, Md.
 Meyers Mfg. Co., The Fred J., Hamilton, O.
 Ohio Elevator & Machine Co., The, Columbus, O.
 Otis Elevator Co., New York, N. Y.
- Elevator Rops. [See Wire Rope.]**
- Elevator Safety Gates.**
 American Elec. Mch. & Elevator Co., St. Louis, Mo.
 Richmond Safety Gate Co., Richmond, Ind.
- Emery Wheels. [See Grinding Wheels.]**
- Engineers.**
 APPRAISAL.
 Atlantic Engineering Co., Savannah, Ga.
 Day & Zimmerman, Philadelphia, Pa.
 Ferree Co., The H. G., Memphis, Tenn.
 Meade, Richard K., Baltimore, Md.
 Weller, Francis R., Washington, D. C.
- BLAST FURNACES.**
 Smythe Co., The S. R., Pittsburgh, Pa.
- BRIDGE.**
 Atlantic Engineering Co., Savannah, Ga.
 Greiner & Whitman, Baltimore, Md.
 Grimmer & Toussaint, Tampa, Fla.
 Martin Co., A. J., Portsmouth, Ohio.
- CHEMICAL.**
 Crosby, Walter W., Baltimore, Md.
 Institute of Industrial Research, Washington, D. C.
 Kimball, Herbert S., Boston, Mass.
 Little, Inc., A. D., Boston, Mass.
 Meade, Richard K., Baltimore, Md.
 Pittsburgh Testing Laboratory, Pittsburgh, Pa.
- CIVIL.**
 Arnold Co., The, Chicago, Ill.
 Brown & Clarkson, Washington, D. C.
 Ferree Co., H. G., Memphis, Tenn.
 Grimmer & Toussaint, Tampa, Fla.
 Hayward & Ashby, Rocky Mount, N. C.
 Hogue Engineering Ass'n., Charleston, W. Va.
 Knowles, Morris, Pittsburgh, Pa.
 Lewis, Fred H., Birmingham, Ala.
 Moile, H. E., New York, N. Y.
 Moore & Thomas, Vicksburg, Miss.
 Pain & Young, Tampa, Fla.
 Renshaw & Breese, Huntington, W. Va.
 Rucker, B. Parks, Chattanooga, Tenn.
 Shand Engineering Co., Columbia, S. C.
 Stevens, Harry, Washington, D. C.
 Thompson & Mosley, Inc., Greensboro, N. C.
 Waldo, W., Houston, Tex.
 Walker Engineering Corp., Tampa, Fla.
 White Companies, J. G., New York, N. Y.
- DAMS.**
 Grimmer & Toussaint, Tampa, Fla.
 Martin Co., A. J., Portsmouth, Ohio.
 Quick, Alfred M., Baltimore, Md.
 Requa Co., O. W., Charlotte, N. C.
 Spiker, William O., Atlanta, Ga.
 Weller, Francis R., Washington, D. C.
 White Companies, J. G., New York, N. Y.
- DOCKS.**
 Greiner & Whitman, Baltimore, Md.
- DRAINAGE AND IRRIGATION.**
 Atlantic Engineering Co., Savannah, Ga.
 Brown & Clarkson, Washington, D. C.
 Dabney Engineering Co., Memphis, Tenn.
 Ford, Bacon & Davis, New York, N. Y.
 Knowles, Morris, Pittsburgh, Pa.
 McDuffy Bros. & Cheves, Inc., Charleston, S. C.
 Thompson & Mosley, Inc., Greensboro, N. C.
 Walker Engineering Corp., Tampa, Fla.
- EFFICIENCY.**
 Crosby, Walter W., Baltimore, Md.
 Institute of Industrial Research, Washington, D. C.
 Little, Inc., A. D., Boston, Mass.
 Quick, Alfred M., Baltimore, Md.
- ELECTRICAL.**
 Arnold Co., The, Chicago, Ill.
 Graves Engineering Co., Inc., New York, N. Y.
 Hogue Engineering Ass'n., Charleston, W. Va.
 Kellogg, P. O., Baltimore, Md.
 Levy-Morton Co., Columbus, Ga.
 Lewis, Fred H., Birmingham, Ala.
 Moile, H. E., New York, N. Y.
 Rucker, B. Parks, Chattanooga, Tenn.
 Stone & Webster Engr. Corp., Boston, Mass.
 Tucker & Laxton, Charlotte, N. C.
 White, Gilbert O., Charlotte, N. C.
- ELECTRIC LIGHT AND POWER PLANTS.**
 Dabney Engineering Co., Memphis, Tenn.
 Ford, Bacon & Davis, New York, N. Y.
 Graves Engineering Co., Inc., New York, N. Y.
 Kellogg, P. O., Baltimore, Md.
 Kelly, Thomas C., Cincinnati, Ohio.
 Levy-Morton Co., Columbus, Ga.
 Martin Co., A. J., Portsmouth, Ohio.
 Scofield Engineering Co., Philadelphia, Pa.
 Stone & Webster Engr. Corp., Boston, Mass.
 Weller, Francis R., Washington, D. C.
 White Companies, J. G., New York, N. Y.
 White, Gilbert O., Charlotte, N. C.
- GAS.**
 Ford, Bacon & Davis, New York, N. Y.
 Gas Engineering Co., Trenton, N. J.
 Renshaw & Breese, Huntington, W. Va.
- GEOLOGICAL.**
 Brown & Clarkson, Washington, D. C.
 Davis, Geo. C., Philadelphia, Pa.
 Froehling & Robertson, Richmond, Va.
 Grimsley, G. P., Martinsburg, W. Va.
 Hogue Engineering Ass'n., Charleston, W. Va.
 Institute of Industrial Research, Washington, D. C.
 Renshaw & Breese, Huntington, W. Va.
- HYDRO-ELECTRIC.**
 Atlantic Engineering Co., Savannah, Ga.
 Brown & Clarkson, Washington, D. C.
 Graves Engineering Co., Inc., New York, N. Y.
 Greiner & Whitman, Baltimore, Md.
 Howe, Charles F., Macon, Ga.
 Knowles, Morris, Pittsburgh, Pa.
 Quick, Alfred M., Baltimore, Md.
 Requa Co., O. W., Charlotte, N. C.
 Rucker, B. Parks, Chattanooga, Tenn.
 Scofield Engineering Co., Philadelphia, Pa.
 Shearer, C. E., Memphis, Tenn.
 Stone & Webster Engr. Corp., Boston, Mass.
 Stevens, Harry, Washington, D. C.
 Weller, Francis R., Washington, D. C.
 White Companies, J. G., New York, N. Y.
- INDUSTRIAL PLANT.**
 Cunningham Construction Co., Shreveport, La.
 Day & Zimmerman, Philadelphia, Pa.
 Ferree Co., The H. G., Memphis, Tenn.
 Gilman, Harry L., Boston, Mass.
 Graves Engineering Co., Inc., New York, N. Y.
 Grimmer & Toussaint, Tampa, Fla.
 Guarantee Construction Co., New York, N. Y.
 Institute of Industrial Research, Washington, D. C.
 Kelly, Thomas C., Cincinnati, Ohio.
 Kimball, Herbert S., Boston, Mass.
 Lewis, Fred H., Birmingham, Ala.
 Little, Inc., A. D., Boston, Mass.
 Meade, Richard K., Baltimore, Md.
 Rucker, B. Parks, Chattanooga, Tenn.
 Scofield Engineering Co., Philadelphia, Pa.
 Shearer, C. E., Memphis, Tenn.
 Stone & Webster Engr. Corp., Boston, Mass.
 Stevens, Harry, Washington, D. C.
 Weller, Francis R., Washington, D. C.
 White Companies, J. G., New York, N. Y.
- INSPECTIONS AND TESTS.**
 Crosby, Walter W., Baltimore, Md.
 Froehling & Robertson, Richmond, Va.
 Hill, Nicholas S., Jr., and S. F. Ferguson, New York, N. Y.
 Hunt & Co., Robert W., Chicago, Ill.
 Institute of Industrial Research, Washington, D. C.
 Meade, Richard K., Baltimore, Md.
 Pittsburgh Testing Laboratory, Pittsburgh, Pa.
- LANDSCAPE.**
 Beckmann Co., P. J., Augusta, Ga.
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 Pain & Young, Tampa, Fla.

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Engineers.

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Ford, Bacon & Davis, New York, N. Y.
McCrory & Co., J. B. Atlanta, Ga.
Rucker, H. Parks, Charlotte, N. C.

MECHANICAL

Arnold Co., The, Chicago, Ill.
Graves Engineering Co., Inc., New York, N. Y.
Kelly, Thos. O., Cincinnati, Ohio.
Lewis, Fred H., Birmingham, Ala.
Lide, Martin J., Birmingham, Ala.
McLundie, A. S., Chattanooga, Tenn.
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Stevens, Harry, Washington, D. C.
Tucker & Laxton, Charlotte, N. C.

MINING

Brown & Clarkson, Washington, D. C.
Grimsley, G. P., Martinsburg, W. Va.
Hogue Engineering Ass'n, Charleston, W. Va.
Jones, E. M., Chattanooga, Tenn.
Renshaw & Breece, Huntington, W. Va.

MUNICIPAL

Anderson & Christie, Charlotte, N. C.
Brown & Clarkson, Washington, D. C.
Croby, Walter W., Baltimore, Md.
Dabney Engineering Co., Memphis, Tenn.
Elrod, Henry E., Dallas, Texas.
Graves Engineering Co., Inc., New York, N. Y.
Greiner & Whitman, Baltimore, Md.
Havely, H. B., Monroe, N. C.
Hayward & Ashby, Rocky Mount, N. C.
Hogue Engineering Ass'n, Charleston, W. Va.
Knowles, Morris, Pittsburgh, Pa.
McCrory Bros. & Cheves, Inc., Charleston, S. C.
McCrory Co., J. B., Atlanta, Ga.
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White, Gilbert O., Charlotte, N. C.

PAVING AND ROAD

Anderson & Christie, Charlotte, N. C.
Atlantic Engineering Co., Savannah, Ga.
Croby, Walter W., Baltimore, Md.
Elrod, Henry E., Dallas, Texas.
Havely, H. B., Monroe, N. C.
Institute of Industrial Research, Washington, D. C.
McCrory Bros. & Cheves, Inc., Charleston, S. C.
Moore & Thomas, Vicksburg, Miss.
Shand Engineering Co., Columbia, S. C.
White, Gilbert O., Charlotte, N. C.

PUBLIC SERVICE PROPERTIES

Day & Zimmerman, Philadelphia, Pa.
Ferre Co., The H. G., Memphis, Tenn.
Ford, Bacon & Davis, New York, N. Y.
Gilman, Harry L., Boston, Mass.
Graves Engineering Co., Inc., New York, N. Y.
Scotfield Engineering Co., Philadelphia, Pa.
Stone & Webster Eng'g Corp., Boston, Mass.
Weller, Francis R., Washington, D. C.
White Companies, J. G., New York, N. Y.

REINFORCED CONCRETE (Bridges, Buildings, etc.)

Cunningham Construction Co., Shreveport, La.
Foster-Creighton-Gould Co., Nashville, Tenn.
Guarantee Construction Co., New York, N. Y.
Hayward & Ashby, Rocky Mount, N. C.
Interstate Const. Co., Louisville, Ky.
Luten, Daniel B., Indianapolis, Ind.
Martin Co., A. J., Portsmouth, Ohio.
Requarth Co., O. W., Charlotte, N. C.
Savannah Eng. & Construction Co., Savannah, Ga.
Spiker, William C., Atlanta, Ga.
Tucker & Laxton, Charlotte, N. C.
White Companies, J. G., New York, N. Y.

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Gilman, Harry L., Boston, Mass.

SEWERAGE AND WATER-WORKS

Anderson & Christie, Charlotte, N. C.
Brown & Clarkson, Washington, D. C.
Dabney Engineering Co., Memphis, Tenn.
Ford, Bacon & Davis, New York, N. Y.
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Mayer, J. H., Birmingham, Ala.
Miller, Hiram Allen, Boston, Mass.
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Walker Engineering Corp., Tampa, Fla.
White Companies, J. G., New York, N. Y.
White Gilbert O., Charlotte, N. C.

STEEL WORK AND ROLLING MILLS

Smythe Co., The S. R., Pittsburgh, Pa.

STRUCTURAL STEEL

Foster-Creighton-Gould Co., Nashville, Tenn.
Shearer, O. E., Memphis, Tenn.
Spiker, Wm. O., Atlanta, Ga.
Renshaw & Breece, Huntington, W. Va.

THEATRE CONSTRUCTION

Gatlin, W. R., Hopkinsville, Ky.

Engines

COMPRESSION AIR

Dake Engine Co., Grand Haven, Mich.

GAS AND GASOLINE

Affiliated Manufacturers Co., Milwaukee, Wis.
Allie-Chalmers Manufacturing Co., Milwaukee, Wis.
Cooper Co., O. & G., Mt. Vernon, Ohio.
De La Vergne Machine Co., New York, N. Y.
Gas Engineering Co., Trenton, N. J.
Mieta, A., New York, N. Y.
Portsmouth Engine Co., Portsmouth, O.
Southern Engine & Boiler Works, Jackson, Tenn.
Van Dusen, Roy Co., The, Columbus, O.
Westinghouse Machine Co., The, Pittsburgh, Pa.

OIL

Bolinders Co., New York, N. Y.
Chicago Pneumatic Tool Co., Chicago, Ill.
De La Vergne Machine Co., New York, N. Y.
Fairbanks-Morse & Co., Atlanta, Ga.
Weitz, A., New York, N. Y.
Moore & Sons Corp., Samuel L., Elizabeth, N. J.
Power Mfg. Co., Lima, Ohio.
Snow Steam Pump Plant, The, New York, N. Y.

STEAM

Allie-Chalmers Manufacturing Co., Milwaukee, Wis.
Ball Engine Co., Erie, Pa.
Buffalo Forge Co., Buffalo, N. Y.
Cameron & Barkley Co., Charleston, S. C.
Chicago House Wrecking Co., Chicago, Ill.
Cooper Co., O. & G., Mt. Vernon, Ohio.
Dake Engine Co., Grand Haven, Mich.
Griffith & Wedge Co., The, Zanesville, O.
Houston, Stanwood & Gamble Co., Cincinnati, O.
Leffel & Co., James, Springfield, O.
Lombard Iron Works, Augusta, Ga.
McKenzieburg Iron Works, Charlotte, N. C.
Murray Iron Works Co., Burlington, Ia.
Phoenix Iron Works Co., Mendville, Pa.
Schiffeld Iron Works, Macon, Ga.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
Vittor Mfg. Co., Milwaukee, Wis.
Westinghouse Machine Co., Pittsburgh, Pa.

Envelopes.

ong & Selden Co., Baltimore, Md.

Excavating Machinery

American Clay Machinery Co., The, Bucyrus, Ohio.
American Steel Dredge Co., Fort Wayne, Ind.
Bay City Dredge Works, Bay City, Mich.
Byars Mach. Co., The John F., Ravenna, O.
Economy Excavator Co., Iowa Falls, Iowa.
Fairbanks Steam Shovel Co., Marion, O.
Hayward Co., New York, N. Y.
Jaffrey Mfg. Co., Columbus, O.
Lidgerwood Mfg. Co., New York, N. Y.
Marion Steam Shovel Co., Marion, O.
Monaghan Machine Co., Chicago, Ill.
Morris Machine Works, Baldwinville, N. Y.
National Hoisting Engine Co., Harrison, N. J.
The Automatic Shovel Co., Lorain, Ohio.
Williams Co., The G. H., Cleveland, O.

Excavators (Trench)

Bay City Dredge Works, Bay City, Mich.
Economy Excavator Co., Iowa Falls, Iowa.
Fairbanks Steam Shovel Co., Marion, O.
Hayward Co., The, New York, N. Y.
Monaghan Machine Co., Chicago, Ill.

Excelsior Machinery

Kline, Lewis T., Alpena, Mich.

Exhaust Heads

American Spiral Pipe Works, Chicago, Ill.

Exhibits (Machinery Builders' Equipment and Supplies)
Builders' Exchange, Baltimore, Md.

Expansion Joints

Badger & Sons Co., E. B., Boston, Mass.

Expansion Joints (Street and Road)

Phillip Carey Co., The, Cincinnati, Ohio.

Expanded Metal (See Lath)

Explosives

Du Pont Powder Co., Wilmington, Del.
Keystone Nat'l. Powder Co., Emporium, Pa.

Export Agents (South America)

Lutz, Friedr. W., Richmond, Va.

Factory Sites (Town and Railroad) [See Industrial, Agricultural and Commercial Opportunities.]

Fans (Electric)

General Electric Co., Schenectady, N. Y.

Fans (Ventilating) [See Blowers, Exhaust Fans.]

Fastener Driving Machine (Corrugated Joint)

Saranac Machine Co., Benton Harbor, Mich.

Feed-Water Heaters and Purifiers

American Water Softener Co., Philadelphia, Pa.
Blake & Knowles Steam Pump Works, East Cambridge, Mass.
Murray Iron Works Co., Burlington, Ia.
National Pipe Bending Co., New Haven, Conn.
Scaife & Sons Co., Wm. B., Pittsburgh, Pa.
Stewart Heater Co., Buffalo, N. Y.

Feed-Water Heater and Purifier and Oil Separator Combined.
Blake & Knowles Steam Pump Works, East Cambridge, Mass.
Platt Iron Works Co., Dayton, Ohio.
Stewart Heater Co., Buffalo, N. Y.

Felt (Building, Sheathing)

Barrett Mfg. Co., Philadelphia, Pa.

Fencing (Woven Wire Field)

American Steel & Wire Co., Chicago, Ill.

Fencing, Entrance Gates (Iron, Steel, Wire)

American Steel & Wire Co., Chicago, Ill.
Bolles Iron & Wire Works, J. E., Detroit, Mich.
Cincinnati Iron Fence Co., Cincinnati, Ohio.
Cyclone Fence Co., Waukegan, Ill.
Dow Wire & Iron Works, Louisville, Ky.
Dufar & Co., Baltimore, Md.
Eureka Supply Co., Chattanooga, Tenn.
New Jersey Wire Cloth Co., Trenton, N. J.
Ohio Elevator & Mach. Co., The, Columbus, O.

Fertilizer Machy. [See also Phosphate Machy.]
Stedman's Foundry & Machine Works, Aurora, Ind.
Vaik & Murdoch Iron Works, Charleston, S. C.

Files

Barnett Co., G. & H., Philadelphia, Pa.

Nicholson File Co., Providence, R. I.

Filters (Water for Domestic and Industrial Purposes)
American Water Softener Co., Philadelphia, Pa.
International Filter Co., Chicago, Ill.
New York Const. Jewell Fil. Co., New York, N. Y.

Fire Clay (See Brick, Fire)

Fire Door Fixtures

Richmond Safety Gate Co., Richmond, Ind.

Victor Mfg. Co., Newburyport, Mass.

Fire Extinguishers

Badger & Sons Co., E. B., Boston, Mass.

Fire Escapes

Bolles Iron & Wire Works, J. E., Detroit, Mich.

Chesapeake Iron Works, Baltimore, Md.

Eureka Supply Co., Chattanooga, Tenn.

Fire Hose

Eureka Fire Hose Mfg. Co., New York, N. Y.

Fire Places (Brick and Tile)

Hood Brick Co., B. Midlin, Atlanta, Ga.

Fireproof Building Construction. [See Concrete Construction.]

Fireproof Building Material

Bannon Pipe Co., P., Louisville, Ky.

Johns-Manville Co., H. W., New York, N. Y.

Fireproof Doors and Shutters

Kinnear Mfg. Co., Columbus, O.

Richmond Safety Gate Co., Richmond, Ind.

Victor Mfg. Co., Newburyport, Mass.

Wagner's Sons Co., J. F., Louisville, Ky.

Wilson Corp., J. G., New York, N. Y.

Fireproof Windows. [See Window Frames and Sashes (Fireproof).]

Fittings (Wire Rope)

Waterbury Co., New York, N. Y.

Fireproofing (Brick and Tile)

Hood Brick Co., B. Midlin, Atlanta, Ga.

Fixtures (Electric Lighting)

Hill & Co., Walter E., Baltimore, Md.

Flanges (Iron and Steel)

American Cast Iron Pipe Co., Birmingham, Ala.
American Pipe & Construction Co., Phila., Pa.
American Spiral Pipe Works, Chicago, Ill.
Dart Mfg. Co., E. M., Providence, R. I.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
National Tube Co., Pittsburgh, Pa.
U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.
Wood & Co., R. D., Philadelphia, Pa.

Flooring (Greosoted Block)

Republic Greosoting Co., Indianapolis, Ind.

Flooring (Hardwood, Maple, Oak)

Whiting, William S., Elizabethton, N. C.

Floor Surfacing Machines (Automatic Ball Bearing, Electric)

Wayvell Chappell & Co., Chicago, Ill.

Flour and Grist Mill Machinery and Supplies

Caldwell & Sons Co., H. W., Chicago, Ill.
Salem Foundry & Machine Works, Salem, Va.
Starr Co., B. F., Baltimore, Md.
Wolf Co., Chambersburg, Pa.

Flue Lining

Owensboro Sewer Pipe Co., Owensboro, Ky.

Southern Sewer Pipe Co., Birmingham, Ala.

Forges

Buffalo Forge Co., Buffalo, N. Y.

Forgings

Weimer Chain & Iron Co., Lebanon, Pa.

Foundations (Waterproof)

Requarth Co., O. W., Charlotte, N. C.

Foundry Equipment and Supplies

Hill-Branner Fdry. Supply Co., Cincinnati, O.
Newport Sand Bank Co., Inc., Newport, Ky.

Foundry Facings (Talc and Soapstone)

Georgia Talc Co., Asheville, N. C.

Hill-Branner Fdry. Supply Co., Cincinnati, O.

Foundry and Machine Shops

Glamorgan Pipe & Foundry Co., Lynchburg, Va.
Golden Foundry & Machine Wks., Columbus, Ga.
Graininger & Co., Inc., Louisville, Ky.
Lombard Iron Works, Augusta, Ga.
Tilke, E. E., Petersburg, Va.

Vaik & Murdoch Iron Works, Charleston, S. C.

Frogs (See Railroad Frogs and Switches)

Fuel Economizers

Green Fuel Economizer Co., Watteawan, N. Y.

Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Fuel Oil

Gulf Refining Co., Pittsburgh, Pa.

U. S. Asphalt Refining Co., New York, N. Y.

Furnaces (For Industrial Purposes)

Smythe Co., The S. R., Pittsburgh, Pa.

Furniture (Metal)

The Van Dorn Iron Works Co., Cleveland, Ohio.

Fuses (Electrical)

Economy Fuse & Mfg. Co., Chicago, Ill.

Fuse Shells (Renewable)

Economy Fuse & Mfg. Co., Chicago, Ill.

Fuses, Bases and Fittings

Johns-Manville Co., H. W., New York, N. Y.

Galvanized Steel and Iron

American Sheet & Tin Plate Co., Pittsburgh, Pa.

La Belle Iron Works, Stenbury, O.

McCalla Co., Harold, Philadelphia, Pa.

Whitaker-Glessner Co., Portsmouth Plant, Portsmouth, Ohio.

Wood Iron & Steel Co., Alan, Philadelphia, Pa.

Youngstown Sheet & Tube Co., Youngstown, O.

Galvanizing Machinery (Sheet)

Erie Foundry Co., Erie, Pa.

Garage and House (Portable)

Dixie Culvert & Metal Co., Atlanta, Ga.

Steel Products Co., The, Savannah, Ga.

Garbage Disposal Plants

Stacy-Bates Co., Minneapolis, Minn.

Gas Blowers (Turbine)

Terry Steam Turbine Co., Hartford, Conn.

Gas Engines (See Engines, Gas)

Gas Machines

Kemp Mfg. Co., O. M., Baltimore, Md.

Millburn Co., Alex. R., Baltimore, Md.

Gas Plants

Gas Engineering Co., Trenton, N. J.

Power & Mining Machinery Co., Oudaby, Wis.

Western Gas Construction Co., Ft. Wayne, Ind.

Gas Producers

Smythe Co., The S. R., Pittsburgh, Pa.

Westinghouse Machine Co., Pittsburgh, Pa.

Wood & Co., R. D., Philadelphia, Pa.

Gasoline and Kerosene

Gulf Refining Co., Pittsburgh, Pa.

Gas and Steam Fitters' Tools

Saunders' Sons, D., Tonkers, N. Y.

Gears

Caldwell & Sons Co., H. W., Chicago, Ill.

Oresson-Morris Co., Philadelphia, Pa.

James Mfg. Co., D. O., Chicago, Ill.

Jeffrey Mfg. Co., Columbus, O.

Generating Sets

Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Triumph Electric Co., Cincinnati, O.

Geologists

Davis, Geo. O., Phila., Pa.

Froehling & Robertson, Richmond, Va.

Grimsley, G. P., Martinsburg, W. Va.

Glass (Plate, etc.)

Binswanger & Co., Memphis, Tenn.

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Albany Lubricating Co., New York, N. Y.

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Watchman's Clock & Supply Co., New York, N. Y.

Water Filters. (See Filters, Water, etc.)

Waterproofing. (For Brick, Concrete, Grout, etc.)
Aqua-Bu Co., The, Philadelphia, Pa.
Harrold Mfg. Co., Philadelphia, Pa.
Johns-Manville Co., H. W., New York, N. Y.

Water-Softening Apparatus. (Purifying.)
American Water Softener Co., Philadelphia, Pa.
International Filter Co., Chicago, Ill.
N. Y. Cont. Jewell Filtr'g Co., New York, N. Y.
Tucker & Laxton, Charlotte, N. C.

Water-Wheels. [See Turbines. (Hydraulic)]

Water-Works Supplies and Appliances.
Allen-Scales Engineering Co., Inc., Nashville, Tenn.
American Cast Iron Pipe Co., Birmingham, Ala.
American Pipe & Constr. Co., Philadelphia, Pa.
Bourbon & Brown & Hesse Wks. Co., Cincinnati, O.
Clark Co., H. W., Mattoon, Ill.
Clow & Sons, James B., Chicago, Ill.
Coldwell-Wilcox Co., Newburgh, N. Y.
Columbian Iron Works, Chattanooga, Tenn.
Donaldson Iron Co., Ennas, Pa.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Layne & Bowler Co., Houston, Tex.
Massillon Iron & Steel Co., Massillon, Ohio.
Pomona Terra-Cotta Co., Pomona, N. C.
Salem Fdry. & Machine Works, Salem, Va.
Standard Spiral Pipe Works, Chicago, Ill.
Stevens' Sons Co., H., Macon, Ga.
T. S. Cast Iron Pipe & Fdry. Co., Burlington, N. C.
Wood & Co., R. D., Philadelphia, Pa.

Welding. (Oxy-Acetylene Process.)
Frest-O-Lite Co., Inc., The, Indianapolis, Ind.

Welding Plants. (Oxy-Acetylene.)
Milburn Co., Alex. N., Baltimore, Md.

Welding Apparatus. (Oxy-Acetylene Process.)
Frest-O-Lite Co., Inc., The, Indianapolis, Ind.

Well Contractors. (Oil, Artesian, etc.)
Cook, A. D., Lawrenceburg, Ind.
Hughes Specialty Well Drill Co., Charleston, S. C.
Stothoff Bros., Flemington, N. J.

Well Tools and Supplies.
Cook, A. D., Lawrenceburg, Ind.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Williams Bros., Hixes, N. Y.

Wheels and Axles.
Electric Wheel Co. (Mfrs.), Quincy, Ill.
Oliver Mfg. Co., W. J., Knoxville, Tenn.

Wheelbarrows and Carts.
Sterling Wheelbarrow Co., Milwaukee, Wis.

Window Frames and Sash. (Fireproof.)
Detroit Steel Products Co., Detroit, Mich.
Edwards Mfg. Co., The, Cincinnati, O.
Wagner's Sons Co., J. F., Louisville, Ky.

Window Frame Machinery.
Phillips Mfg. Co., Orlando, Fla.

Window Guards. (Wire.) [See Wire Goods.]

Windmills.
Coldwell Co., Inc., W. E., Louisville, Ky.

Wire. (Barbed Wire, etc.)
American Steel & Wire Co., Chicago, Ill.
Cyclone Fence Co., Waukegan, Ill.
Koebling's Sons Co., John A., Trenton, N. J.
Youngstown Sheet & Tube Co., Youngstown, O.

Wire. (Galvanized and Annealed.)
American Steel & Wire Co., Chicago, Ill.
Gulf States Steel Co., Birmingham, Ala.

Wire. (Galvanized Telephone.)
American Steel & Wire Co., Chicago, Ill.
Gulf States Steel Co., Birmingham, Ala.

Wire. (Plain Steel, Hoop, etc.)
Gulf States Steel Co., Birmingham, Ala.

Wire Cloth. (Iron, Steel, Brass, etc.)
Coldwell & Sons Co., The, H. W., Chicago, Ill.
Eureka Supply Co., Chattanooga, Tenn.
Meyers Mfg. Co., The, Fred J., Hamilton, O.
New Jersey Wire Cloth Co., Trenton, N. J.

Wire Goods.
Bolles Iron & Wire Wks., J. E., Detroit, Mich.
Dow Wire Iron Works, Louisville, Ky.
Dufur & Co., Baltimore, Md.
Dufur, Baggett & Co., Baltimore, Md.
Meyers Mfg. Co., The, Fred J., Hamilton, O.
New Jersey Wire Cloth Co., Trenton, N. J.

Wire Netting.
American Steel & Wire Co., Chicago, Ill.
New Jersey Wire Cloth Co., Trenton, N. J.

Wire Rope. [See Rope (Wire.)]

Wire Rope Clips.
American Steel & Wire Co., Chicago, Ill.
Broderick & Bascom Rope Co., St. Louis, Mo.

Wood Distillation.
Struthers-Wells Co., Warren, Pa.

Wood Pipes (For Water, etc.)
Wyckoff & Son Co., A., Elmira, N. Y.

Wood (Preservative.)
Harrold Mfg. Co., Phila., Pa.
Reeves Co., The, New Orleans, La.

Woodworking Machinery.
Elmer, Lewis T., Alpena, Mich.
Phillips Mfg. Co., Orlando, Fla.

Yarn. (Tarred Sisal.)
Columbian Rope Co., Auburn, N. Y.

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Cyclops Fence Co., Waukegan, Ill.
Roebling's Sons Co., John A., Trenton, N. J.
Youngstown Sheet & Tube Co., Youngstown, O.
Wire. (Galvanized and Annealed.)
American Steel & Wire Co., Chicago, Ill.
Gulf States Steel Co., Birmingham, Ala.
Wire. (Galvanized Telephone.)
American Steel & Wire Co., Chicago, Ill.
Gulf States Steel Co., Birmingham, Ala.
Wire. (Plain Steel, Hoop, etc.)
Gulf States Steel Co., Birmingham, Ala.
Wire Cloth. (Iron, Steel, Brass, etc.)
Coldwell & Sons Co., The, H. W., Chicago, Ill.
Eureka Supply Co., Chattanooga, Tenn.
Meyers Mfg. Co., The Fred J., Hamilton, O.
New Jersey Wire Cloth Co., Trenton, N. J.
Wire Goods.
Bolles Iron & Wire Wks., J. E., Detroit, Mich.
Dow Wire & Iron Works, Louisville, Ky.
Dufur & Co., Baltimore, Md.
Dufur, Baggett & Co., Baltimore, Md.
Meyers Mfg. Co., The Fred J., Hamilton, O.
New Jersey Wire Cloth Co., Trenton, N. J.
Wire Netting.
American Steel & Wire Co., Chicago, Ill.
New Jersey Wire Cloth Co., Trenton, N. J.
Wire Rope. [See Rope (Wire.)]
Wire Rope Clips.
American Steel & Wire Co., Chicago, Ill.
Broderick & Bascom Rope Co., St. Louis, Mo.
Wood Distillation.
Birthers-Wells Co., Warren, Pa.
Wood Pipes (For Water, etc.)
Wyckoff & Son Co., A., Elmira, N. Y.
Wood (Preservative.)
Barrett Mfg. Co., Phila., Pa.
Reeves Co., The, New Orleans, La.
Woodworking Machinery.
Eltna, Lewis T., Alpena, Mich.
Phillips Mfg. Co., Orlando, Fla.
Yarn. (Tarred Sisal.)
Columbian Rope Co., Auburn, N. Y.

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